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T H E
COMMENTARIES
UPON THE
APHORISMS

O F

Dr. HERMAN BOERHAAVE,

The late Learned Professor of Physic in the
Univerfity of LEYDEN,

C O N C E R N I N G

The KNOWLEDGE and CURE of the feveral
DISEASES incident to HUMAN BODIES.

By GERARD VAN SWIETEN, M. D.

Translated into E N G L I S H.

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THE

COMMENTARIES

UPON THE

APHORISMS

OF

HERMAN BOERHAAVE.

CONCERNING THE

KNOWLEDGE and CURE of DISEASES.

Of a QUINSY.

SECT. DCCLXXXIII.

WHEN the deglutition and respiration are much obstructed, or when they are obstructed and painful at the same time, which happens from the morbid cause, acting upon the parts subservient to these two functions seated above the stomach and lungs, the disorder is then called a quinsy.

Angina or Quinsy is derived *ab angendo* from compressing or straitening, a term used by physicians

ficians to denote all those kinds of diseases, which, by obstructing or putting the parts in pain, subservient to deglutition or respiration, disturb either one or both of those two functions at the same time ; but so the causes of these diseases are seated above the stomach and lungs ; for otherwise they are usually reckoned among diseases of the stomach or lungs themselves. By this single name the Latins have comprehended all those diseases ; but the Greeks, more especially the moderns, have a greater diversity of names, which indeed occasions some confusion, since all of them do not use the same name to denote the same disease. Hence Celsus ^a says, *Nostri anginam vocant : apud Graecos nomen prout species est* ; “ that
 “ what our people call by the term angina, or
 “ quinsy, is by the Greeks denominated accord-
 “ ing to the particular species.”

The term *συνάγχη* occurs almost only in Hippocrates ; and, when the disorder was slight, he termed it *παρὰσυνάγχη* ^b : but, as far as I know, neither the term *συνάγχη* nor *παρὰσυνάγχη*. But it is well known that the preposition *παρὰ* prefixed to the names of diseases, frequently signifies a less violence or intensity of them. But thus *parapoplexia* denotes a slighter kind of apoplexy, &c. but since dogs after hard running breathe difficultly, thrust out their tongue, have their eyes red and protuberant, and breathe very short or quick ; and as unfortunate patients afflicted with the worst kind of quinsies seem to be affected much in the same manner ; from thence the name *συνάγχη* seems to have been given to this disease. *Nam ab angina vocata suffocatur homo & in faucibus*

^a Lib. IV. cap. 4. pag. 169.

^b De Morbis Lib. III. cap. 10. Chapter. Tom. VII. pag. 589.

bus magis urgeri videtur, neque salivam neque aliud quidquam attrahit, & oculi dolent, & velut strangulatis prominent, & illis fixè intuetur, neque eos convertere potest, &c. “ For from the disorder called a quinsy the person is suffocated, and seems to be more oppressed in the fauces, nor can they drink or swallow even the spittle; the eyes also are painful and protuberant as in strangled people, and they seem to be fixed so that the patient cannot move them, &c.”^c

But the term *συνάγχης* is to be found in the Greek physicians after Hippocrates, and in various senses. For Aretaeus^d distinguishing the two kinds of quinseys, concerning which we shall treat in the following Aphorism, calls that synanches in which there is a stricture or collapſion of the organs greater than is agreeable to the nature of the patient, attended with a violent strangulation, as if turning inward with it's oppression: but on the contrary he calls that species chynanches which invades the tonsils, epiglottis, fauces, uvula, &c. and is distinguished by a phlegmon. Hence he also observes that a cynanches turns into a chynanche, when the former changing for the better inflames all the parts, towards which the phlegmon inclining outwards proceeds. For the celebrated Petite^e very well observes in his remarks, that there is a vicious transposition of the words in this text, and that therefore instead of *ὡς συνάγχην ἀπὸ κυνάγχης γίνεσθαι*, we are to read *ὡς κυνάγχην ἀπὸ συνάγχης γίνεσθαι*, &c. It is also evident that Hippocrates calls the worst kind of quinsy by the name cynanches; but that Aretaeus^f intends by this name the mildest kind.

B 2

But

^c Ibidem. ^d De causis & signis Morbor. acut. Lib. I.

^e p. 7. pag. 5. & 6. ^f Ibid. pag. 47.

^g In Prognostic. Charter. Tom. VIII. pag. 673.

But Celsus ^z reckoning up the names which are ascribed by the Greeks to the several kinds of quinsies, makes no mention of the cynanches; but he calls that species which is without any tumor or redness, synanche: but when the tongue and fauces are swelled with redness, &c. he observes that such a quinsy is called cynanche, which is the same with the cynanche of Aretaeus. But he says, *Illis communia sunt, aeger non cibum devorare, non potionem potest; spiritus ejus intercluditur. Levius est, ubi tumor tantummodo & rubor est, caetera non sequuntur, id παρασυνάγχην appellant*: “ That the symptoms in common to
 “ these, are an inability of the patient to swal-
 “ low food, or drink, and his breath is inter-
 “ cepted. But where there is only a tumor and
 “ redness without these symptoms, the disorder
 “ is more slight, and is called parasynanches.”

But Trallian ^b asserts, that the antient physicians made use of the name synanches to denote every kind of inflammation in general, seated about the gula (but as we said before, this word is not to be met with in Hippocrates); but the latter of the antient physicians he observed, distinguished the inflammation about the gula into four kinds, and assigned different names to them, which is likewise told us by Aegineta ⁱ. For an inflammation of the internal muscles of the larynx they called cynanches; but of the external muscles paracynanches. But, when the interior muscles of the pharynx were inflamed, they called it synanches: but, if the exterior muscles of the pharynx were affected in the same manner, they then called it parasynanches.

But

^z Lib. IV. cap. 4. pag. 196. ^b Lib. IV. cap. 1. pag. 219.

ⁱ Lib. III. cap. 37. pag. 39.

But Aetius^{*} tells us, that the antients called that sort of quinsy cynanches, which happened from a luxation of the vertebræ, concerning which we shall speak at § 818.

From all which it is evident in what a different sense this term is used among authors: and that these particulars seem necessary to be remarked, in order to the better understanding what is said upon this disease by the antient physicians. But in the mean time it seems most commodious to comprehend, by the general name of a quinsy, all those diseases which either injure deglutition, or respiration, or both; whether the injury happens from an impediment only, or from pain, or from both together, provided the morbid cause injuring these two functions is seated above the stomach or lungs. But in the next place a quinsy may be distinguished into two kinds according as it is found with or without an apparent tumor of the parts. But according to the different nature of the tumor which attends the quinsy, and the different parts in which the tumor is seated, the same disease may afterwards pass under different denominations as we shall presently see; and thus we may be best able to distinguish and treat the particular kinds of this disease which are numerous enough.

S E C T. DCCLXXXIV.

OF this disorder there are observed two kinds; the first appears without any manifest sign of tumor or swelling either external or internal; but the other kind is constantly

B 3

stantly

* Tetrabili. 2. ferm. 4. pag. 483.

stantly found with some tumor in one part or other in the forementioned organs (§ 783).

Since therefore the seat of a quinsy is a sign to all those parts which extend from the mouth to the stomach and lungs, many parts of which are manifest both to the eyes and touch, either of the patient or by-standers, when they search after the present impediment of the respiration or deglutition, they either discover some tumor or not, to which the disease may be ascribed. Hence the most natural division of a quinsy is into that which happens without any manifest sign of a tumor appearing externally, or visible in the fauces internally; and that which is attended with some tumor obvious to the senses. This division of a quinsy has been observed both by Hippocrates ^l, Celsus ^m, and Aretaeus ⁿ. But all of them have condemned that kind which happens without any manifest tumor as the most fatal; and (as we said before under the preceding Aphorism) this kind has been called *synanches* by Aretaeus: but that the other kind which happens without a tumor of the organs he calls *cynanches*. Even Aretaeus ^o believed this first kind of quinsy to be so fatal, that he compares it to the mortiferous vapours which, exhaling from the pits of *chæron*, in a moment suffocate people; and therefore he judges the disorder to lie only in the breath or air which is inspired, as there is no sign of inflammation occurs in any part. But he seems to have been of opinion that such malignity did not exist in the air before it's inspiration (for

^l In Prognosticis Charter. Tom. VIII. pag. 673.

^m Lib. IV. cap. 4. pag. 199.

ⁿ De caus. & sign.

Morbor. acutor. Lib. I. cap. 7. pag. 5.

^o Ibidem.

(for then it ought to affect all patients alike in the same manner); but that the inspired air acquired such a deleterious power in the body of the patient, from the latent malignity contained in him. For he takes an instance of the like kind from the mad dog who so infects the salutary air which he inspires by the latent poison within his body; that, by breathing it out afterwards in the face of a person while he is drawing in his breath, is capable of infecting him with the like madness. And hence he concludes, *Talem igitur respirationis mutationem interius fieri, haud impossibile; cum & millena alia, quae in homine sunt, eandem speciem tum causis exterioribus obtinent. Succī corrumpentes intus & extus (sunt); morbi quoque medicamentis deleteriis assimilēs, & a medicamentis talia vomunt, qualia ob febres vomere solent*: “ That it is therefore not impossible for such a change to be
 “ made in the respiration internally; since there
 “ are even a thousand other things performed in
 “ the human body in the same manner when exterior causes concur. There are the juices corrupting within and without the body; likewise diseases resembling deleterious medicines,
 “ and by medicines such humours are discharged
 “ by vomit as are usually brought up that way
 “ in fevers ^p.” But it will appear from what follows, that such a quincy of the worst kind, which is suddenly fatal, may arise without any manifest tumor from an inflammation of some of the organs, as also from many other causes, even though the inspired air contracts no malignity.

S E C T. DCCLXXXV.

THE former of these happens mostly in the end of lingering diseases, especially after profuse and often repeated evacuations; it is attended with a paleness, dryness, and shrinking of the fauces at the same time; and therefore the nerves and muscles commonly are paralytic in this case: it is almost constantly a sign of death approaching, being very seldom curable, and then only by such remedies as fill the empty vessels with good juices, warm and corroborate at the same time.

We are now to treat first of that kind of quinsy, which appears without any manifest sign of tumor or swelling either internally or externally. But it will appear hereafter at § 801. and 802. where we shall treat of an inflammatory quinsy, that from an inflammation seated within and about the top of the larynx or the interior membrane lining the windpipe, a quinsy may arise, not manifesting itself by any tumor, but then the pain and other signs of inflammation sufficiently denote to a skilful physician that such a disorder lies concealed. But there have been other kinds of this disorder observed very dangerous and almost fatal, in which there is an apparent dryness, paleness, and shrinking of the fauces, without any signs of inflammation concealed in the internal parts. Sometimes indeed there is a pain and redness appears in the fauces, but only slight, nor are the parts afflicted thereby swelled, but rather seem to be considerably sunk or collapsed. Indeed this sort of quinsy more
feldom

scldom occurs than the rest, and only after the body has been exhausted by diseases of a long continuance, more especially after the profuse and often repeated evacuations have exhausted the body, as by bleeding, purging, vomitings, &c. Sydenham^a has observed a quincy of this kind arise from such causes after continual or intermitting fevers at first with a difficulty and uneasiness in the swallowing, afterwards attended with a hoarseness, hollowness of the eyes, and Hippocratical face as it is called (because Hippocrates describes it in his prognostics) which are the most certain signs of approaching death. But he observes that a longer continuance of the fever with evacuations more profuse than necessary commonly made way for the appearance of this fatal symptom. Aretaeus^r has also remarked that kind of quincy which is attended with a collapse or shrinking of the organs more or less, according to the nature of each patient, as we said before in § 783. It is indeed true that he does not derive its origin from those causes which have been lately mentioned, but rather believed that the inflammation in that case lay concealed in the breast itself, about the heart and lungs, and seems to expect rather something advantageous from the inflammation turning outward: but in the mean time if those signs which he gives us of this quincy are compared with that described by Sydenham, it will manifestly appear to be the same. For Aretaeus^s says, *Synanche collapsio, gracilitas, pallor comitantur: oculi cavi, intus demersi, fauces & uvulae retractae, tonsillae multo magis subsidentes, vocisque privatio*: “ That
 “ the synanche or quincy is attended with a col-
 “ lapsedion

^a Sect. I. cap. 5. 122.
 acutor. Lib. I. cap. 7. pag. 5.

^r De Causis & signis morbor.
^s Ibidem, pag. 6.

“ lappion or shrinking, and paleness of the fauces,
 “ hollowness and sinking of the eyes, a retracti-
 “ on of the fauces and uvula, a greater subsiding
 “ of the tonsils, and a loss of the speech.” For
 in that kind of the quinsy, which has for it's cause
 a latent inflammation about the larynx or wind-
 pipe, without a tumor externally, and without a
 swelling of the fauces and tonsils, yet these last
 retain their natural bulk and red colour. Aretæus[†]
 likewise acknowledges the most eminent dan-
 ger to attend this disease, when he says, those
 who are taken suddenly with it perish before the
 physician can be fetched, or at least before the
 physician being called can make use of his art.
 But what Celsus[‡] gives us concerning the synan-
 ches, perfectly corresponds to this kind of quinsy.
 For he says, *Interdum enim neque rubor neque tumor*
ullus apparet; sed corpus aridum est, vix spiritus
trahitur, membra solvuntur: “ That sometimes
 “ neither a tumor nor any redness appears, but
 “ the body is dry, the patient hardly breathes,
 “ and the limbs are relaxed and in a manner pa-
 “ ralytic.” The like is also given us by Cælius
 Aurelianus^{*}.

If therefore we consider the preceding causes
 and concomitant symptoms of this kind of quinsy,
 it will be evident that all the vessels are collapsed,
 from a deficiency of the vital fluids, and that
 therefore there is not a due quantity of arterial
 blood and nervous spirits requisite for the actions
 of the muscles. But since the actions of such a
 number of different muscles[†] concur towards the
 performance of deglutition, these muscles being
 rendered paralytic from too great inanition, this
 fatal species of quinsy is produced, which is very
 rarely

[†] Ibidem.

[‡] Lib. 4. cap. 4. pag. 196.

^{*} Acutior

Morb. Lib. III. cap. 2. pag. 182.

[†] Vide H. Boerh. Institut. §. 70. 71. 72. 73. 74. 75.

rarely cured. Nor is this kind of quinsy observed only in lingering diseases; but likewise in those which are acute of a bad kind before death, it sometimes appears. Hence Hippocrates ^z says that those patients are dangerously afflicted who have a painful swelling in the parts about the fauces, which appear small or shrunk with suffocation. Where it is to be observed that he says only τὰ κατὰ φάρύγγα ὀδυνώδεα, which denotes but a slight kind of pain attending, as appears more evidently from this Coan prognostics ^a, where we have the following passage τὰ ἐν ὄξεσι κατὰ φάρύγγα ἰσχνὴν μικρὰ ὀδυνώδεα, &c. But in this case it is evident the muscles were paralytic, because he adds that upon the yawning of such patients they could not easily shut their mouth. But Hippocrates likewise in many other places condemns such a shrinking of the fauces as a fatal sign. Thus he says ^b: *Fauces levitur dolentes* (φάρυγξ ἐπώδυνος) *graciles, cum jaetatione, strangulantes, acutè perniciosae*: “ But, the
“ fauces being shrunk with a slight pain, the rest-
“ lessness and a strangulation in a considerable de-
“ gree are pernicious signs.” He has likewise many other passages to the same purpose, to repeat which would be too tedious in this place.

Hence it is sufficiently evident why this kind of quinsy is seldom curable, since all the hopes are placed in a speedy restitution of the lost humours, so as to fill the empty vessels with good vital juices. But even the deglutition itself injured prevents such nourishment from being commodiously taken into the body; and at the same time those things are deficient from which the assimilation of the ingested aliments may be expected,

^z Prorrhetic. Lib. I. text. 11. Charter. Tom. VIII. pag. 707.

^a No. 276. ibid pag. 867.

^b Prorrhetic. Lib. I. Charter. Tom. VIII. pag. 754. & Coac Praenot. No. 266. ibid. pag. 866.

expected, namely a due quantity of healthy juices, and a requisite action of the vessels upon their contained fluids (see § 25.). The whole of the cure therefore will consist in filling the patient with such nourishment as comes nearest to the nature of healthy humours, capable of being subdued by the weakened assimilating powers, at the same time increasing the action of the vessels upon their contained fluids by a prudent use of corroborating medicines; concerning which see what has been said in the comment to § 28.

At the same time it is also evident with how much care this kind of quinsy ought to be distinguished from the rest, since the method of curing it is so very different. For the inflammatory quinsy requires sudden evacuations by bleeding, cooling purges, &c. as we shall see hereafter; which yet would most certainly hasten the patient's death in the present case.

S E C T. DCCLXXXVI.

THIS first kind of the disorder sometimes arises suddenly without manifest signs of any disease preceding; it hardly admits of a cure; and it almost constantly after death demonstrates a suppuration in the lungs.

The kind of quinsy which has been already described follows after diseases preceding, so that it may at least be foreseen, though it is most frequently incurable. But observations teach us that sometimes even in healthy people without any signs of diseases preceding, the deglutition or respiration or both are suddenly impeded, and sudden death follows soon after, though there is no
tumor

tumor in the fauces or external parts, nor any unusual shrinking and dryness could be previously observed. Many authors have called the like disorder a suffocating catarrh, because they constantly believed it to arise from a sudden distillation of dissolved humours upon the fauces and lungs. For when they saw in the disorder called a coryza, that there often happens such a sudden and copious flux of a sharp serum through the nose, and that the schneiderian membrane suddenly swelled so as to impede all the passage of the air through the nostrils, which are naturally so large : they with good reason believed that something of the like nature might happen in the membrane investing the larynx and windpipe, from whence must follow the most sudden suffocation and death. For medical observations teach us that such tumors suddenly arise in various parts of the body in people who are otherwise healthy. Thus it is familiar enough with some people to be immediately taken with an erysipelatous tumor and inflation of the face when they go into the open air in a moist and warm season ; and I am even acquainted with some people who have been immediately affected in this manner, only upon looking out of a window in the morning. And therefore it does not seem impossible that from the like causes may arise a quinsy suddenly fatal, though no signs of any disease have preceded. But in the mean time it is certain that this very rarely happens, since we do not here treat of an inflammation suddenly arising about the upper parts of the larynx, which indeed very speedily kills by suffocating the patient, but may be known and distinguished by the acute pain and other signs (see §. 801, 802.) preceding or attending the disease.

disease. Hippocrates observes^c, that, if after a warm west wind with rain, a north dry wind follows, cattarhs suddenly ensue destructive to old people. Schenckius^d relates a case of this kind which confirms what has been before said. For a man of a full habit almost sixty years of age, who had no disorder except a weariness or lassitude, was seized in the middle of the night with such a violent catarrh, that although he was sensible of the profuse and violent defluxion, and applied for relief, yet he was soon after suffocated before any assistance could be given him. But immediately after death a great quantity of viscid ropy phlegm ran out of his mouth. But yet Schenckius remarks that such cases very rarely happen. But if we consider what is said concerning these suffocating catarrhs by the collectors of medical observations, it will appear evident that very frequently the lungs have been found suppurated in the dead bodies of such: thus Charles IX. King of France suddenly perished by the breaking of a vomica in the lungs, whereby so great a quantity of purulent matter flowed into the windpipe, as instantly caused suffocation^e. Thus also in another place^f we read of a butcher, who at noon perceived a pain about the larynx and fauces, attended with some difficulty of swallowing his food and drink: towards the evening he went to an apothecary to ask for a gargle, but the next night he perished by sudden suffocation. Upon opening the dead body the lungs were found full of purulent matter. But what deserves to be particularly

^c Aphor. 12. Sect. III. Charter. Tom. IX. pag. 102.

Lib. I. De Catarrho observ. 5. pag. 149.

^e Bonet. sepulchr. anatom. Lib. II. Sect. II. Tom. I. pag. 579.

^f Ibid. Lib. I. Sect. XXIII. observ. 1. pag. 476.

ticularly remarked is, that this patient had not been before troubled with a cough nor any spitting of blood, but had hitherto lived healthy, with a robust and corpulent habit. Hence we learn that purulent vomica's or abscesses may be formed in the viscera, though in the mean time the patient seemed to enjoy a perfect state of health.

It has indeed been observed in the bodies of those who have expired of suffocating catarrhs, that polypous concretions have been lodged about the heart and larger vessels, and that the ventricles of the brain have been found full of lymph or phlegm^s &c. But all these accidents have no relation to this place, since we here treat only of such morbid causes as injure the deglutition or respiration, by being seated above the stomach and lungs.

At the same time it is also evident from what has been said, that such a kind of quinsy is incapable of a cure, since it suddenly suffocates the patient at once, when they fear nothing amiss; and generally it arises from such causes as are either not capable of being known, or else, if they are discoverable, cannot easily be removed.

S E C T. DCCLXXXVII.

TH A T kind of quinsy which arises with a tumor is variously denominated either from the nature of the tumor itself, or from the parts which it occupies. Hence quinsies are distinguished into oedematous, cattarrhous, inflammatory, purulent, scirrhus, cancerous, and convulsive. We

^s Ibid. Lib. I. Sect. XVII. Tom. I. pag. 412, &c.

We observed before at § 784. that quinseys are distinguished into two kinds, namely those which appear without any manifest signs of a tumor either external or internal, concerning which we have already treated; and those which demonstrate themselves with some tumor of the part affected, concerning which we are here to treat.

But it is evident this last kind of quinsy may be different according to the part which is occupied by the concomitant tumor; or according to the different nature of the tumor itself which by its bulk obstructs the parts subservient to deglutition or respiration. But under the present Aphorism we are to treat concerning the different nature of the tumors which produce a quinsy; and afterwards we shall treat of the parts themselves in which these tumors are seated.

But according to the different nature of the tumor the quinsy is called either oedematous.] We observed before on another occasion in the comment to § 112. N^o. 1. that the antient physicians called any kind of tumor an oedema, but afterwards that by custom only such tumors were called oedematous, as were soft and without pain. We likewise observed there that the cellular membrane is the seat of such tumors; and that the constituent matter of them is either water, or else sometimes a thick viscid phlegmatic humour. When therefore such a pale tumor invades the parts enumerated in the following Aphorism, almost without heat or pain, so as to injure the respiration or deglutition, it is called an oedematous quinsy.

Catarrhus.] It was observed in the comment to § 719. that the antient physicians being ignorant of the circulation of the blood, when they saw a sudden accumulation of any humour upon
som

some part of the body, and not being able to understand by what force and by what passages it was derived there, were therefore of opinion that the matter was first collected in the brain, as a viscus of a cold habit, and the least abounding with blood, and that from thence the humour flowed towards other parts of the body; therefore they called the disorder a catarrh or defluxion, more especially as in this disorder there often appeared a sudden and copious flux of humours from the nose. The principal seat of catarrhs is the mucous membrane of Schneiderius, which lines the internal parts of the nose, fauces, œsophagus, windpipe, &c. and as we see the membrane of the nose affected with a catarrh to swell and become slightly inflamed, discharging a considerable quantity of humours, so the same thing happens to this membrane in other parts which it lines: hence this membrane being thus affected in the pharynx and œsophagus injures deglutition, and in the windpipe it occasions very difficult breathing with a very troublesome cough; and therefore it is evident that a quinsy may arise from this cause, which is then justly denominated catarrhus.

Inflammatory.] It was demonstrated in the history of inflammations § 374. that almost every part of the body is obnoxious to inflammation; and therefore it is evident that this disorder may take place in the organs subservient to deglutition and respiration about the neck and fauces; and we shall see hereafter that it very often actually invades these parts. But this kind of quinsy may be known by the common signs of inflammation enumerated at § 382.

Purulent, scirrhus, cancerous.] An inflammation being once formed, if it cannot be resolved or dispersed, it terminates either in an abscess or

a gangrene, or else in glandular parts it turns to a scirrhus, and may afterwards degenerate into a cancer: and therefore hence again it is evident enough that a quinsy takes different denominations, according to the different manner of terminating the inflammation seated in these parts.

Convulsive.] A convulsion properly speaking takes place only in muscles, as we said before at § 230. When therefore the muscles subservient to deglutition or respiration, seated above the stomach and lungs, are seized with a convulsion from any cause, it is termed a convulsive quinsy. Hippocrates ^h seems to have remarked such a quinsy in a tetanos. For the jaws were not only stiff like wood, so that the mouth could not be opened when the tetanos seized the patient, but he likewise observes that such patients, when they were about to expire, discharged drink, suppings, and phlegm through their nose, namely because the muscles of the pharynx or œsophagus were convulsed. For we shall hereafter see, that the pharynx being inflamed the matter swallowed returns thro' the nostrils (§ 804.) Thus also in an opisthotonos, Hippocrates ⁱ esteems it a fatal sign for the patient to regurgitate what he endeavours to swallow through the nose. This disorder is very familiar in hysterical women, when, the fauces being contracted by a convulsion of the muscles of these parts, they are almost suffocated only from a disturbance of the nervous system by violent passions of the mind, sudden evacuations, &c.

^h De Morbis Lib. III. cap. 12. Charter. Tom. VII. pag. 587. ⁱ Coac. Praenot. No. 361. Charter. Tom. VIII. pag. 872.

S E C T. DCCLXXXVIII.

TH E S E tumors (§ 787.) take place in the tongue or it's muscles; in the palate and tonsils; in the uvula and it's muscles; in the cavities of the os frontis, of the upper jaw, and of the os sphenoides; from a polypus taking root and growing there so as to stop up the nostrils, thrust down the pendulous part of the palate, diminish the capacity of the fauces, and stop up the passage of the pharynx and larynx: these tumors likewise invade all, or some of the muscles of the os hyoides and the muscles both external and internal, which are either common or proper to the larynx; as also the interior muscular membrane of the windpipe, the superior muscles of the pharynx, the oesophages muscle and the gula itself; and lastly these tumors may take place in the glands which are seated so near the windpipe or gula, that these last may be compressed by the distension of them, such as all the salival glands, which are scattered about these parts, to which add finally the glandulae thyroideae themselves.

We are now to examine what parts are the seat of those oedematous, inflammatory, &c. tumors which produce a quinsy.

The tongue or it's muscles.] Of what use the tongue is in deglutition when moved by the muscular fibres constituting it's substance, and by the various muscles inserted into it's root, has been

made evident in our institutes or academical lectures on the theory of physic; and therefore it is evident that the forementioned tumors invading the tongue or it's muscles must impede deglutition. But even a swelling upon the tongue, more especially about it's root, may so compress the adjacent larynx, as to endanger suffocation. I have seen a case of this kind in a woman upwards of sixty years old, who had been a long time afflicted with scorbutic ulcers in both legs, but in other respects healthy enough. One afternoon she perceived a kind of slight roughness upon her tongue; in the evening there was a pain about the root of it, which soon moved it's seat to the tip. But the disorder increased so suddenly, that about the middle of the night I being called, found the patient almost suffocated, and incapable of swallowing any thing. But the tongue was so extremely swelled and deformed, that it perfectly resembled a mass of flesh filling the whole cavity of the mouth. I immediately ordered plentiful bleeding, and a sharp purging clyster to be injected, which with the application of the most emollient cataplasms and fomentations put a stop to the increase of the tumor, which appearing to be nothing abated eight hours after; blood-letting and a clyster of the like kind were again repeated; after this, the swelling of the tongue began to subside and became softer; the fever diminished which was before intense, and about five in the afternoon she began to recover her speech, and be able to swallow something; the respiration at the same time being likewise tolerably free, she in so short a space happily escaped from the most eminent danger.

Such a kind of inflammatory tumor of the tongue seems to have been described by Hippocrates:

crates^k: but he calls it Ὑπογλωσσίς, which his translators render by the term ranula. But he says, *Si ranula fiat, lingua tumet, parsque sub ipsa & externa dura est ad contactum, & salivam deglutire non potest*: “ If a ranula happens, the tongue
 “ swells, and the parts under it with those which
 “ are external are hard and resisting to the touch,
 “ and the patient cannot swallow the saliva.” But that this was an inflammatory kind of tumor appears from what follows afterwards. For he then says, *Ubi vero purulentum fuerit, secato. Interdum vero sua sponte rumpitur, & absque sectione subsidet*: “ but when it comes to suppuration, or
 “ becomes purulent, you must lay it open by in-
 “ cision. But sometimes it breaks itself, and
 “ the tumor subsides without incision, &c.” Aretaeus^l likewise observes in treating of a quincy, that the tongue is sometimes thrust out from betwixt the teeth, being so much swelled or increased in bulk, that it cannot be contained in the cavity of the mouth. But such a swelling of the tongue happens in the worst quinies, when, the return of the blood through the jugular veins being obstructed by the tumor of the adjacent parts, the tongue is destined by the accumulated blood, as we shall declare hereafter at § 807, but in this place we treat only of such a tumor, which arising first in the tongue occasions a quincy, and not of that swelling of this part which follows from a quincy or tumor seated in the other adjacent parts.

That scirrhus and cancerous tumors sometimes invade the tongue, so as to injure deglutition, we are too well acquainted from medical history.

^k De Morbis Lib. II. cap. 10. Charter. Tom. VII. pag. 562.

^l De Causis & Signis Morbor. acut. Lib. I. cap. 7. pag. 5.

It is likewise evident that the same tumor of this organ may happen if the muscles inserted in the tongue are inflamed, as I have sometimes manifestly observed to happen from an inflammatory tumor under the chin obstructing the action of the genioglossi muscles.

Palate.] It was made evident in our theoretical lectures or institutes, that the food and drink, laid upon the back of the tongue betwixt the surface and the arched palate furnished with grooves directing to the fauces, are by a successive pressure determinated towards the pharynx. If therefore an inflammatory or suppuratory tumor invades the palate, or if an exostosis is there seated, it is evident deglutition must be thereby injured. Such tumors of the palate frequently occur, when the membrane investing the bones of the palate have been irritated by carious teeth in the upper jaw, or by the roots of them penetrating through the sockets.

Tonsils.] Indeed the swellings which produce a quinsy are most frequently seated in these parts. It is well known that the tonsils are seated betwixt two muscular columns which descend on each side from the uvula, which tonsils consist of the mucous membrane convoluted into spires, so as to increase the surface for the position of the mucilaginous cryptae, from whence the mucus is expressed, when the aliments to be swallowed pass this way, that, being lubricated by this mucus, they may more easily descend, through the pharynx and œsophagus. But although when the tongue is depressed in a healthy person the fauces appear so ample, yet when the tonsils are inflamed and swelled, this space is often so much diminished as even to obstruct the passage of liquids to be swallowed. The tonsils themselves
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and an inflammation of them were by the antient physicians called by the same name^m, *i. e.* paristhmia, namely because they are seated in that part which lies betwixt the mouth and the gula, which they called isthmus. Celsusⁿ, in enumerating the diseases of the several ages, seems to call these parts and the disorders of them from distension or swelling merely by the denomination of glandulae. But that these parts are frequently disordered appears from Hippocrates^o making mention of the tonsils when he reckons up the diseases of children, with which they are usually invaded after cutting their teeth.

Uvula and it's muscles.] The conical part which hangs pendulous from the middle of the moveable palate, is at this day called the uvula; but Hippocrates^p calls it γαργαρέωνα, and this seems to have been the proper name of this part for some time; but the same part was called uva, when it suffered a morbid change of it's usual figure. Thus it is called staphyle or uva by Hippocrates^q, *quando ad gurgulionem (γαργαρέωνα) pituita a capite descendit, isque pendulus & rubicundus evadit, & successu temporis nigrescit*: “When
“ phlegm descends from the head to the uva,
“ which becoming red and pendulous or relaxed
“ in process of time turns blackish.” Hence Aretaeus^r likewise observes that various denominations are given to this part, when it's figure is changed by disease: for if by a phlegmon it be-

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^m Galen. Comment. in Aphor. 26. Sect. III. Charter. Tom. IX. pag. 121. ⁿ Lib. II. cap. 1. pag. 46.

• Aphor. 26. Sect. III. Charter. Tom. IX. pag. 121.

^p In Prognosticis Charter. Tom. VIII. pag. 675. & alibi pluribus in locis. ^q De Morbis Lib. III. cap. 3.

Charter. Tom. VII. pag. 553. ^r Lib. I. De causis & signis Morborum acutorum cap. 8. pag. 6. Galen. Comment. 2. in 2. Epidem. Charter. Tom. IX. pag. 148.

came equally enlarged throughout it's whole length to it's extremity, it was then termed columna (*κίλιν*): but when the extremity of it only increased in a roundish figure, and of a livid or blackish colour, it was then called (*σαφυλή*) uva, because then the figure and colour of it resembled a grape. Thus Hippocrates^s also calls it uva, *quando summus gurgulio aqua impletur, ejusque pars extrema rotunda & pellucida fit*: “when the tip of the
 “uvula is distended with water, and the extreme
 “part of it becomes round and pellucid.” But Celsus^t denominates this part *uva*, and does not change it's name, though the part altered it's figure according to different diseases, and, as he tells us, *& a pituita diducta tenuis, acuta, alba, esset; vel si ima livida & crassa, summa tenuis foret*: “be-
 “came white, thin, or sharp from a defluxion of
 “phlegm; or if the bottom was thick and livid,
 “the top would be thin or extenuated.”

It is evident enough from Hippocrates, Aretaeus, and others of the antient physicians who have described these diseases, that an inflammation, suppuration, or gangrene sometimes invades the uvula alone or together with the circumjacent parts, so as to produce a dangerous quinsy; and the same thing is likewise confirmed by daily experience among ourselves. The uvula, being scirrhus, has sometimes so far increased as to fill the whole cavity of the mouth, and almost touch the anterior tēeth, as we have observed before upon another occasion from Hildanus in the comment to § 484. But the muscles affixed to this part, serving to perform the various motions of it in deglutition, may evidently be affected in the like

^s De Morbis Lib. II. cap. 10. Charter. Tom. VII. pag. 562.

^t Lib. VI. cap. 14. pag. 389. & Lib. VII. cap. 10. N^o. 3. pag. 445.

like manner. For, as Galen ^u well observes, *haec mala nonnunquam sunt solius tunicae ventriculo & gulae, & faucibus, totique ori communis inflammationes; nonnunquam vero & subjectorum ipsi musculorum*: “ these disorders are sometimes the consequence of an inflammation only in the common membranes lining the fauces, gula, and stomach, with the whole mouth; but sometimes the muscles which lie under those membranes are likewise affected.”

In the cavities of the os frontis, upper jaw, os sphenoides, &c.] We know from anatomy and physiology, that the capacity or cavity of the nostrils is increased by the frontal sinuses, seated betwixt the two plates of the os frontis, removed from each other, and by the Antra Highmoriana formed in the upper jaw; add to these the cells of the os sphenoides, which likewise open into the cavity of the nostrils. It is likewise evident from thence, that the mucous membrane of Schneiderius lines all these cavities of the nostrils. Now there are sometimes observed wonderful excrescences of this membrane, which is distributed through all these cavities; and these excrescences, gradually increasing in bulk, intercept or lessen the free passage of the air through the cavities of the nostrils, and, being at length farther extended, they project through the foramina of the nostrils, or else protuberating backward behind the pendulous covering of the palate, they extend into the fauces so as to give great uneasiness. But as these excrescences are frequently rooted in several parts of the internal nose, when they are pulled from thence, they appear to be furnished as it were with several roots which are generally soft and spongy;

^u In Commentar. Aphor. 26. Sect. III. Charter. Tom. IX. pag. 121.

spongy; and from hence or from the multitude of their branches, or from a resemblance to the fish polypus, which is furnished with several hard protuberances, they are called polypus's. This kind of disorder has been described by Hippocrates^x in the following words: *Si polypus oriatur in naso, ex medio cartilaginum (cartilaginis habet alia lectio) dependet velut gurgulio, & ubi spiritum expellit (homo) foras progreditur, ac mollis est; ubi vero spiritum attrahit, retrocedit. Obscure loquitur, & dum dormit, stertit*: “ If a polypus
 “ arises from the middle of the cartilage in the
 “ nose, it hangs down like the uvula, and when
 “ the patient breathes out the air it is protruded
 “ outward and is soft; but, when the patient
 “ inspires, the polypus recedes inward. The
 “ patient speaks hollow or obscurely, and snores
 “ in his sleep.” He again reckons up four other kinds of polypus's of the nose, differing almost only by their greater degree of hardness, or by becoming more malignant and degenerating into a cancerous disposition. But Celsus^y likewise remarks that sometimes a polypus of the nose protrudes into the fauces, when he tells us, *Πολύπτες vero est caruncula, modo alba, modo subrubra, quae narium ossibus inhaeret, & modo ad labra tendens narem implet, modo retro per id foramen, quo spiritus a naribus ad fauces descendit, adeo increscit, ut post uvam conspici possit, strangulatque hominem, maximè austro aut euro flante*: That a polypus is
 “ a fleshy excrescence, sometimes white, some-
 “ times red, adhering to the bones of the nose;
 “ and which sometimes inclining towards the
 “ lips fills up the nostrils, and sometimes descend-
 “ ing behind the opening, through which the
 “ breath

^x De Morbis Lib. II. cap. 11. Charter. Tom. VII. pag. 562.

^y Cels. Lib. VI. cap. 8. N^o. 2. pag. 380.

“ breath is drawn from the nostrils to the fauces,
“ it increases so far as to become visible behind
“ the uvula, and suffocates the patient, more
“ especially when there is a westerly or easterly
“ wind.”

But as these polypuses being pulled out appear to have the same structure with the mucous membrane lining the cavity of the nostrils, being supplied with the like vessels, nervous fibres, and mucous cryptae ^z, it seems reasonable to conclude them to be nothing more than fungous excrescences or enlargements of this mucous membrane. This is further confirmed, because, in the dead bodies of those who have had polypuses in the nose, we find such excrescences of this mucous membrane. Thus in a woman who two years before had a polypus pulled out from the right nostril, where it was protuberant as well as visible behind the uvula, a little before death she complained of perceiving a new kind of disorder in her nose, and, upon breaking open the maxillary sinus, a polypus of the like kind was discovered, only less ^a. Thus also Ruysch ^b found a polypus in the Antrum Highmorianum of a dead body which he publicly dissected; and in a woman who was severely afflicted with a malignant tumor of the upper part of the cheek, and excrescence, of the gums, after extirpating the excrescence pulling out some of the grinding teeth and applying the actual cautery, which penetrated into the Antrum Highmorianum, on the following days he thrust out several polypuses with his little finger. Perhaps the membranes which are furnished with many mucous cryptae of this kind, are

^z Academ. de Sciences l'An. 1704. hist. pag. 40.

^a Phil. Transf. Abridgem. Tom. III. pag. 75. 58.

^b Observ. Anatom. Chirurg. Centur. observ. 77. pag. 71.

are more easily apt to degenerate into such excrescences. Thus the urinary bladder whose interior surface is beset with mucous glands, has been sometimes found with such excrescences, which are often the cause of an obstinate ischuria, if they are seated near the neck of the bladder ^c.

But, that such polypuses frequently disperse their roots throughout the several cavities of the internal nose, we are taught from the figure of the polypus, given us by Tulpius ^d, which was happily extracted, though it stopped up each nostril, and extended with two protuberances into the fauces. Here it is to be likewise observed that this author discovered the veins dispersed through the polypus, and perceived all the branches of it to be covered with a membrane, under which was contained concreted phlegm, in most parts soft and pellucid, but in some hard and opaque like burnt horn: from whence what has been said concerning the nature of a polypus in the nose is fairly confirmed.

But it is evident enough that a polypus rooted in these cavities of the nose, and afterwards increasing in bulk, may hinder the respiration and deglutition: and the celebrated Boerhaave saw a lamentable instance of this in a man, to whose assistance was called a surgeon dwelling in the suburbs of this city of Leyden, who, though in other respects skilful enough, frankly confessed he could not tell what the patient's disorder was: the patient was almost dead, being nearly suffocated, and when the jaws were opened, not without some difficulty, the tongue appeared like a deformed and livid mass of flesh; and, upon depressing it, there appeared another body, which at first sight could

^c Ibid. Observ. 78. pag. 72.

^d Observ. Medic. Lib. I. cap. 26. pag. 50.

could hardly be distinguished, but by a more strict inquiry it appeared to be the moveable or pendulous part of the palate thrust forward in such a manner that it came near the fore-teeth. As it appeared evident enough from the history of the disease preceding, that a polypus descending from the posterior openings of the nose had thrust forward the pendulous part of the palate, nothing seemed to remain to be done for the patient more than to cut through that part of the palate, and then to extract the polypus either intirely or in part at least to relieve the patient. But, while the surgeon was coming to perform this operation, the unfortunate patient was suffocated.

Polypuses are therefore to be removed before they grow to such a bulk, as may be done commodiously enough when they project either thro' the nostrils or behind the palate, so as to be taken hold off by the forceps; for then they may be frequently extracted without any great pain or hæmorrhage, as we are assured from the observations of physicians. When the extraction has been performed, the fungous remains of the polypus may be cicatrized by drawing through the nose allum dissolved in a large quantity of water, without which precaution the excrescence frequently sprouts out again.

But when the polypus is so seated that it cannot be taken hold of, or when some parts are left behind within the fauces after an extraction, may we not then make use of the method which is described by Hippocrates *? namely he takes a sponge of such a thickness that it may be fitted to the nostril, and then twisting it and binding it round

* De Morbis Lib. II. cap. 11. Charter. Tom. VII. pag. 562, 563.

round with Ægyptian thread to make it harder, he then ties four threads or flaxen strings, so that each of them may be about half a yard long. After this, the four strings being tied together in one, he took a thin slip of tin which at one end had a hole to transmit the four strings fastened together. He then conveyed the slip of tin with it's sharp side foremost through the nostril into the mouth, and, after taking hold of it, drew it forward till he could take hold of the threads of the strings; after this, he sustained these threads by a probe with two grooves, passed under the uvula, lest in drawing them the uvula or moveable part of the palate should be lacerated; and thus he orders the polypus to be extracted by drawing the sponge through the nose into the fauces to abrade what obstacles may adhere to the sides of those parts. This method has been afterwards put in practice by very celebrated surgeons, but with this difference that the cord, for which they commonly use horsehairs, they convey by the fingers behind the pendulous parts of the palate, and, by introducing a pair of crooked forceps through the nostril, they take hold of it and draw it out so that one extremity of the cord hangs out of the nose, and the other out of the mouth. By moving the cord the polypus may be rubbed, and, by anointing that part of it coming out of the nostrils with digestives, it may be gradually consumed. They make use almost of the same precaution when they draw the cord as Hippocrates^f advises to avoid injuring the moveable part of the palate. But it is evident enough that by this means can be removed only such polypuses, or their remains, as are seated in the cavities of the nostrils properly

^f Medical Essays Tom. II. pag. 379. Le Dran Observ. Tom. I. observ. 6.

ly so called ; for all those which are lodged in the Antra Highmoriana, frontal sinuses, or cavity of the os sphenoides, are out of the reach of this method.

All, or some of the muscles of the os hyoides.] The history of deglutition given in our theoretical lectures ^s demonstrates how numerous are the muscles which concur to this action, and most of which are inserted into the os hyoides. If therefore some of these muscles are either inflamed, convulsed, or paralytic, it is evident that the action of deglutition must be disturbed, and in different manners, according to the different muscles affected, whose uses may be learnt from physiology, by attending also at the same time to the impediments discoverable in performing the act of deglutition. The same is also true of the muscles of the pharynx, gula and oesophagus muscles.

And the muscles both external and internal which are either common or proper to the larynx.] *i. e.* The upper part of the windpipe formed by the conjunction of the two arytaenoid cartilages with the incumbent epiglottis and the subjacent thyroide and cricoide cartilages belonging to the larynx. But it is well known from anatomy that many muscles are affixed to all these cartilages, some of which are external, and others are seated within the surface of the forementioned cartilages, and serve to dilate or contract the rima or mouth of the glottis to modulate the voice ; also for the several other uses described in our theoretical or physiological lectures. But also from the same parts arise other muscles which are inserted into the adjacent pharynx, and serve to deglutition. Moreover we know that in swallowing the whole larynx is lifted up, and again depressed by

^s Institut. Boerh. §. 70. ad. 75.

by it's proper muscles which are destined to that purpose. The like disorders may therefore take place in these muscles, as well as in those of the os hyoides, from whence the most dangerous quinsy may arise, as will be made evident hereafter at § 802.

The interior muscular membrane of the windpipe.] The windpipe is known to consist of annular cartilaginous segments, a part of which is absent behind, and it's place supplied with a strong membrane. But these cartilaginous segments are connected together by intervening muscular ligaments. An inflammation therefore and tumor of this membrane may hinder the free ingress of the air into the lungs, and by that means injure the respiration; and for the same reason likewise deglutition will be disturbed, since, as the œsophagus lies close to the membranous and back part of the windpipe, the food swallowed will irritate that part, now painful and inflamed; as also the same effect must ensue when the windpipe together with the larynx is drawn upward in swallowing. But concerning this kind of quinsy we shall treat hereafter at § 801.

The superior muscles of the pharynx, and gula with the œsophagus muscle itself.] For we know from the history of deglutition that the pharynx is dilated by various muscles, in order to facilitate the entrance of what is to be swallowed into it's cavity; and that afterwards, the matter to be swallowed having entered the beginning of the gula, that tube is constricted by the œsophagus muscle, which arising from each side of the annular cartilage is spread round the orifice of the gula or œsophagus, which it invests externally: but the matter swallowing being lodged in the tube of the œsophagus does not descend as through a funnel
by

by it's own weight into the stomach, but is thrust forward by the orbicular and longitudinal muscular coat of the œsophagus, by whose action the aliments are protruded through this tube, moistened and lubricated with it's proper mucus. It is therefore evident that these muscles being inflamed or convulsed, which last very frequently happens in hysterical women, the swallowing must be obstructed, as we shall declare more at large hereafter, §. 804.

In the glands which are seated so near the windpipe and œsophagus, &c.] For in order to the performance of respiration and deglutition free passages are required to admit the air or aliments to be swallowed, and the parts are required to be moveable, which perform the several motions necessary towards these functions. Therefore an inflammatory, suppurative, scirrhus, or other tumor of the glands seated about these parts may evidently injure the respiration and deglutition, either by compressing the tubes, or by impeding, the free action of their numerous muscles. But even the parotids and other salival glands, being thus swelled, frequently occasion a quinsy, which is indeed very difficult to cure, when they degenerate into a scirrhus nature. Those mucous cryptae which are seated in the pharynx, œsophagus, larynx, and windpipe, being obstructed and swelled, may produce the same disorders, while at the same time these parts being diseased, there is a deficiency in the secretion of this mucus which ought to lubricate the passages. Hitherto belong those glands which are termed vague or scatter'd, because they are not constantly found seated in the same places; to which add those described by Vesalius and Morgagni, to be seated behind the œsophagus, about the fifth vertebra of the thorax.

But concerning these we shall speak more at large hereafter at §. 797, when we come to treat of a scirrhus quinsy.

To the glands before-mentioned may be added the glandulæ thyroideæ, incumbent on a cartilage of the same name; but from a tumor of these, unless it be very great and hard, the respiration and deglutition do not seem capable of being much injured, since they are seated in the exterior part of the neck, and the resistance of the subjacent cartilages prevents them from compressing the larynx. But by obstructing the motion of the larynx and deglutition, either by the greatness of their swelling, or by growing to the adjacent parts, they may likewise injure the swallowing. But this effect seldom happens, as is evident from the inhabitants of Tyrole and Carneola, who carry about with them large tumors in the anterior part of the neck as long as they live without much detriment.

S E C T. DCCLXXXIX.

FROM the history of this disorder preceding (§. 785 to 789.) the reason is evident why it is often attended with such numerous, sudden, and frequently fatal events, (§. 783.)

When the patient's swallowing or breathing is injured either from pain or an obstruction of the tubes, or from both together, the disorder is termed by the general denomination a quinsy, namely, when the cause of it is seated above the stomach and lungs. But it is evident from what has been said before, of how many kinds this disorder may be, as it invades either with a manifest

manifest tumor, or without any visible signs of a swelling either internally or externally, in which last case it is generally the most dangerous as we observed before. But we have also seen that the quinsy which arises with a swelling, is again different, according as the matter producing the tumor is either inflammatory, oedematous, or the like; and again, that the great number and variety of the parts subservient to deglutition or respiration, which are capable of being injured or obstructed by such tumors, produces a new and manifold variety of the same disease. But as medical observations teach us that inflammations, catarrhs, oedemas, and convulsions sometimes very suddenly invade various parts of the body, and often without any previous signs, from thence the reason is evident, why a quinsy sometimes so suddenly invades people who are otherwise perfectly in health. At the same time also the reason is evident why this disorder is so often attended with fatal events, since when it arises of a sudden, especially about the larynx, it intercepts all the passage of the air through the windpipe into the lungs, and by that means speedily suffocates the patient: or else when the glands seated about these parts being swelled turn scirrhus and irremovable by any art, then they prove equally fatal, though they do not destroy the patient so suddenly, but by gradually increasing the swelling obstruct the breathing, and intercept the course of the food and drink through the œsophagus, 'till at length the miserable patient is destroyed by a slow marasmus, after long suffering the punishments of Tantalus.

S E C T. DCCXC.

BUT since this disease is so various in it's nature, and is productive of such different effects; and as it thence requires to be treated in different methods, and with various remedies; it is therefore requisite for us to recount or consider each of these as far as the necessary brevity of this place will permit.

Although it was our design in this place only to treat of such acute diseases as induce a particular inflammation in this or that organ, and derive their denomination from the injured function of the organ, (see §. 770.) according to which we ought to have here treated only of an inflammatory quinsy, yet as the diseases included under this name are so very different, and produce such various effects, and require different and sometimes even an opposite method of cure, it will be therefore of use to us to treat of the other kinds of quinsies, which are either not attended with inflammation, or else acknowledge for their material cause the various events of an inflammation, terminating either in an abscess, scirrhus, or gangrene. We shall therefore briefly reckon up and consider the several kinds of quinsies, so far as their difference is derived from the different nature of the tumor, obstructing the organs of deglutition or respiration. For that variety or distinction of this disease, which is taken merely from the parts occupied by these tumors, does not so much vary or alter the method of cure, even though the difference of the prognosis is taken from thence, the disease comprised under this denomination

Sect. 790, 791. Of a phlegmatic Quinsy. 37

nomination being more or less dangerous, according as it is seated in these or those parts. For whether an inflammatory tumor seated in the larynx causes imminent danger of suffocation, or whether the like disorder being seated in the pharynx hinders the swallowing, in either case the same method of cure is required, namely, to remove or disperse the present inflammation. But in the first case the greatness of the danger requires the most powerful remedies to be applied altogether at the same time; and, though remedies of the like kind are to be also applied in the latter case, yet they are slighter, as will be hereafter made evident, when we come to treat of an inflammatory quinsy seated in these parts. We are therefore in the next place to treat of each of these particular kinds of quinsies under it's distinct head.

Of the watery or phlegmatic QUINSY.

S E C T. DCCXCI.

TH E watery, oedematous, or thin catarrhus quinsy, is a painful or obstructed exercise of the breathing and swallowing, with a lymphatic tumor of the parts performing those actions, or of the parts surrounding them.

When a pale watery cold tumor, without the concomitant signs of a violent inflammation, invades those parts which serve for the deglutition or respiration, or when a like tumor seated in the circumjacent parts disturbs the offices of these organs, the patient is said to be afflicted with an

oedematous or watery quinſy. This kind of quinſy is very rarely attended with any conſiderable pain, becauſe, as we ſaid before, it is a peculiarity of oedematous tumors to be indolent : but, if any pain attends, it is generally only what reſults from the diſtemper made in the parts by the tumor. This kind of quinſy is ſometimes obſerved in weak, pale, and leucophlegmatic patients, who have almoſt their whole body ſwelled with a cold fluggiſh tumor ; but in other people it ſeldom or never appears. In this caſe the uvula is generally elongated, almoſt pellucid, and ſwelled with a watery humour there accumulated, and ſometimes alſo the tonſils are in like manner ſwelled and perfectly pale. But tumors of the like kind may ariſe in the circumjacent parts from various cauſes, as we ſhall preſently ſee.

To this place alſo belongs the thin catarrhus quinſy. For, as we ſaid before in §. 787, the ſeat of a catarrh is in that mucous membrane which lines the internal ſurface of the noſe, fauces, œſophagus, windpipe, &c. and that when a perſon is afflicted with a catarrh, this membrane being ſwelled diſtills a thin ſerous and often acrid humour, which excoriates the noſe and irritates the adjacent parts over which it paſſes. If therefore the part of this membrane which lines the uvula, pharynx, tonſils, &c. is affected in this manner, the ſwallowing will be injured ; or if the ſame diſorder takes place in the larynx or windpipe, the free reſpiration will be diſturbed with a troubleſome cough. This evidently appears when catarrhs ſpread epidemically ; for then in ſome people the tonſils are ſwelled, in others there is a troubleſome cough, and others again are afflicted with a ſenſe of fulneſs and an obtuſe pain

pain in the head from a distension of the same membrane in the frontal sinuses, as seems to be very probable. Even in some people I have manifestly observed the same disease wander through different parts of the schneiderian membrane, and afford different symptoms according to the diversity of the several parts; but yet all those symptoms may be removed by the same method of cure, as we shall observe hereafter. But, although there is often observed a slight and as it were a superficial inflammation of this membrane in these catarrhus disorders, yet as the inflammation is so easily dispersed, if it be not exasperated by a perverse treatment, and as there is a considerable quantity of a thin humour distilled from these parts, at least in the beginning of the catarrh, it ought for these reasons to be referred rather to this kind than to the inflammatory quinsy, which being attended with much worse symptoms is highly dangerous, and requires much more powerful remedies.

S E C T. DCCXCII.

TH E feat of this quinsy is therefore like other serous defluxions in a glandular part, in which is deposited and discharged a lymph or serous humour separated from the arteries.

When a watery humour or defluxion is accumulated in the body, it does not reside in the arteries and veins through which the fluids are perpetually moved, but it is collected in the larger and smaller cavities of the body, as will be made evident when we come to treat of a dropsy. It is indeed true, that the arterial lymphatic vessels

may be obstructed about their extremities, from an imperviousness of the fluid, which is naturally moved through those vessels, and consequently they may be dilated and swelled by the impulse of the humours urged against their obstructed ends; so that a lymphatic tumor may be formed in these parts from a distension of these vessels with a pellucid liquor. But in this case there will attend an oedema calidum, or true inflammation in the smallest arterial vessels, not admitting a coloured fluid, as are the yellow serous, and red parts of the blood, concerning which, see what has been observed in the comment to § 380. But at the same time it is evident such a disorder ought to be referred to the inflammatory kind of quinsy. But we are here rather treating of lymphatic tumors lodged in the natural cavities of these parts, which are often greatly dilated by the accumulated liquor. Such tumors may arise in the cellular membrane, surrounding the muscles of these parts and fibres, as is evident from what we observe in the dropsy called anasarca, and the uvula likewise is sometimes invaded with such a pale watery tumor. But also the numerous follicles or cells in these parts, into whose cavities, the liquor, separated from the arteries, affords a mucus, lubricating all these membranes, the emissaries of which follicles being obstructed, they may be dilated in the same manner, so as to produce such watery tumors. In whatever part therefore there is a serous or lymphatic humour naturally collected, separated and expelled from the arteries, if the absorption of it by the bibulous veins, or the secretion of it by proper emissaries is obstructed by any cause; such tumors as these may ensue either from the contained fluid being dispersed through the cellular membrane, or accumulated in some natural cavity

Sect. 792, 793. Of a phlegmatic Quinsy. 41

cavity enlarged. The celebrated author of these Aphorisms observed such a tumor in a noble virgin, which occupied the whole side of the neck from the os hyoides to the processus acromion scapulæ, which by it's bulk impeded the free motion of the adjacent muscles. The integuments being divided by the scalpel, this tumor was enucleated and appeared to consist of a limpid but somewhat thick humour, included in a pretty tough membrane. A tumor of the like kind I have seen lodged under the mastoide muscle equal to the size of a pigeon's egg; and there are many more cases of the like kind to be found in the collectors of medical observations.

S E C T. DCCXCIII.

THIS kind of quinsy then acknowledges every thing for it's cause impeding the free discharge of the lymph; but the number and difference of these causes is very great. Such are a compression of any of the veins, into which perhaps the emissaries of these glands empty themselves; an obstruction formed in the follicle or cavity of the gland itself from a chalky, phlegmatic, stony, fungous, or other matter; an obstruction formed in the emissaries themselves of the gland from the same causes; a compression of these parts; the application of cold to the smallest extremities of the excretory ducts; or, lastly, a too weak circulation of the humours.

An accumulation of lymph, separated from the arteries, constitutes the material causes of such tumors;

tumors; whatever therefore obstructs the free discharge of the lymph may be the occasion of these swellings. But this lymph is absorbed by the veins, or else being freely exhaled into the cavities of the mouth, fauces, larynx, or œsophagus is breathed out from the body, or else being collected in certain cavities it is afterwards discharged by particular emissaries. Every thing therefore which obstructs the absorption of the lymphatic humours, or the motion of them thro' the veins when absorbed, or stops up the cavity of the gland itself or it's emissaries, may give rise to these tumors. Hence it is evident that the number and difference of these causes is very great, but that in the mean time they may nevertheless be reduced to the aforementioned classes.

Any compression of the veins, &c.] When we treated of the cure of contusions at § 333. it was proved that the humours being extravasated from the ruptured vessels, and collected in the natural or morbid cavities adjacent, were gradually dispersed, being attenuated and absorbed by the bibulous mouths of the veins opening throughout the whole external and internal surface of the body. Hence Hippocrates having remarked this, pronounces, *carnes attractrices esse ex cavo & extrinsecus*: “ that the fleshy parts are attractive
 “ both from without, and from the cavities with-
 “ in.” But, for these bibulous veins to be able to absorb the contiguous humours, it is necessary for them to have a free discharge of their contents into the larger branches, so that the lymph absorbed by them may return to the heart. When therefore the veins are compressed, this absorption will be hindered, while in the mean time the exhaling arteries continue to discharge their lymph into the larger and smaller cavities of the body; hence

hence therefore there will be an accumulation of lymph not absorbed, whence the parts distended by this liquor will be swelled. Perhaps also the glands here seated have their emissaries opening into the veins; for there are many glands seated about these parts, whose excretory ducts we have not yet been able to discover, even though there seems to be the same fabric in these as in those glands which discharge a lymph by visible excretory ducts, after being separated from the blood, such as the maxillary and sublingual glands, &c. Lower ^h made a fair experiment which directly proves that a compressure of the veins occasions such lymphatic tumors of the glands. He passed a thread round the jugular veins, and tied them close in a living dog, from whence after a few hours all the parts above the ligature were wonderfully swelled, and the dog perished as if suffocated by a quinsy within two days. But during this whole space the tears plentifully flowed, and a large quantity of saliva distilled from the mouth of the dog, equally as if the animal was under a salivation by taking mercury. After the death of the animal, upon separating the skin of the swelled parts, supposing he should find them all distended with extravasated blood, he was surprised to find no such signs nor even the colour of blood, for all the muscles and glands were wonderfully distended with a limpid serum, and appeared very pellucid. In this manner an atheroma, steatoma, or other tumor formed about these parts, by compressing the adjacent veins, may produce a watery quinsy.

An obstruction formed in the follicle or cavity of the gland itself, &c.] For whether the obstacle be lodged in the hollow follicle of the gland

^h De Corde cap. 2. pag. 123.

gland or it's emiſſary, ſo as to impede the free diſcharge of the fluid ſeparated by it's glandular fabric, the effect will be the ſame, namely an accumulation of the lymph and a diſtenſion of the parts. The ſame effect may likewiſe be produced by an external compreſſure. Whether or no the humours being thus concreted in the cutaneous follicles, after being ſeparated by the glandular fabric from the arterial blood, does not frequently produce large tumors. That the fluid contained in theſe follicles may grow thicker, we are taught plainly from the mucus lubricating the mouth and fauces, and diſcharged from the cryptae or mucous cells of theſe parts. But, ſince the ſtructure of the ſmalleſt glands does not ſo diſtinctly appear to the ſenſes, this may be better underſtood from the knowledge of the larger parts, in which we find the like ſtructure. The gall-bladder receives and collects the bile ſeparated from the arteries diſperſed through it's coats, and brought from the liver by peculiar ducts, which it afterwards diſcharges again by it's emiſſary. But we are taught from numerous obſervations, (which will be hereafter made evident, when we come to treat of a jaundice and an inflammation in the liver) that the bile collected in the gall-bladder may grow ſo thick as not to be capable of being expreſſed by any force from the cyſt, and that calculous concretions ariſe here, which in like manner obſtruct the exit of the bile. But the gall-bladder well enough reſembles that fabric which is uſually aſcribed to the follicles of glands, into the cavity of which membrane is received and collected the fluid ſeparated from the arteries diſperſed through it, and from whence the fluid is afterwards diſcharged by it's emiſſary; whence it ſeems very probable that the like obſtructions
may

may be formed in the glands and their emissaries by a chalky, phlegmatic, stony, or other matter. But practical observations teach us likewise that such impediments do really take place in some glands which are seated about these parts. It may be sufficient for us to produce one or two instances of this. A person, taking a voyage by sea in the winter time, was afflicted with a violent catarrh, which stayed longer than usual, and some time after there was a hard tumor observed under the tongue about the opening of Wharton's duct. This tumor continued for seven years without much trouble to the patient, except that the part was painful whenever he caught cold. But after that time he would be suddenly taken with a swelling of all the glands about these parts, upon first taking a draught of drink at dinner or supper, but the swelling soon went off. But in the eighth year, after a preceding vertigo, the affected part began suddenly to swell, and a purulent matter began to discharge itself from the Whartonian duct; but then this purulent discharge being suddenly stopped, the tumor increased with eminent danger of suffocation. Under these difficulties the patient continued five days, with an incredible discharge of saliva; and then, an incision being made upon the part, a whitish calculus was extracted, covered over with a greenish purulent matter; in figure and bulk it resembled a horse-bean, being in weight about seven grains, and having in the surface manifest impressions of capillary vessels, which had imprinted themselves upon the calculus while it was of a soft consistenceⁱ. A like calculus was also taken from the root of the tongue in another patient, as we are told

ⁱ Acta Anglican. N°. 83. pag. 4062. Abridgment Tom. III. pag. 155. 159.

told in the same place, and there are many more instances of the like kind which occur in authors. It will be made evident hereafter, when we come to treat of the stone, and there is scarce any part of the body free from calculous concretions; and that the rudiments of calculi may be laid even in the thinnest humours: whence it will seem no wonder for such concretions to be observed in these parts.

Cold applied to the extremities of the excretory ducts.] That the mouths of the exhaling arteries in the surface of the body may be contracted by cold, we are taught by Sanctorius, Gorter, and others, who have writ upon the statical part of physic: for they have found by direct experiments that the insensible perspiration, as it is called, is diminished, when a sudden and unusual cold air blows over the parts of the body. But all the parts of the internal mouth, fauces, larynx, wind-pipe, &c. are perpetually moistened and warmed by a dew or vapour exhaling from these ultimate emissaries of the arteries, which seem to perspire much more than all the rest in the surface of the body. When therefore the ultimate excretory ducts in these parts are contracted by cold, the vessels which conveyed the humour to be exhaled, having a resistance about their extremities, will be more dilated and swelled, while the motion of the humours through those vessels continues the same, or else is rather increased. But as the vessels which convey the perspirable matter in these parts are better secured, they cannot be so soon nor so powerfully contracted by the cold as the exterior ducts which are seated in the exterior surface; and thus they will be dilated and swelled, and for this reason the exhaling ducts being thus opened, the dilated vessels continue to transmit a greater quantity

quantity of humours, and often of a grosser consistence.

This evidently appears in a catarrh or cold, which disorder never happens more frequently than when the body is suddenly exposed from a warm to a cold air; as when, after violent heats of the summer, thunder, rain, and hail follows, and introduces a sudden coldness through the air; as also, when the body being heated by a large fire is suddenly exposed to the severe cold in winter time. For in this case the membrane lining the internal parts of the nose is frequently so much swelled, as intirely to intercept the passage of the air through the nostrils. Afterwards a great quantity of humour distils from the nose, and frequently very thick. Now according as this disorder takes place in the various parts of the body, it produces various symptoms. In the nose, it occasions sneezing and a running; in the tonsils, pharynx, and fauces it impedes the swallowing; in the larynx, windpipe, and lungs, it excites a cough, and sometimes is an impediment to the breathing; as the parts affected are more or less swelled. At the same time also the reason is evident, why people of a weak constitution are oftener and more violently afflicted with these diseases, namely, because the vessels being less firm in these are more easily dilated when their exhaling ducts are obstructed, and when once dilated do not so readily contract to their former dimensions; so that sometimes the vessels of these parts so much degenerate, that the humours continue to be expelled very copiously, and for a long time by these parts, and by that means exhaust the whole body, till the patient falls into a true marasmus, as is evident from numerous observations. Upon
this

this subject the celebrated Simpson* deserves to be read, where he explains the manner how the humours are corrupted and vitiated from cold. Hence the reason is evident why Celsus¹, who advises sound and strong bodies to use violent exercises, and so to arm themselves by sometimes bathing in warm and sometimes in cold water, that they may be able to bear the sudden changes of the air without any detriment; yet advises those who are weak, *ut caveant meridianum solem, matutinum & vespertinum frigus, itemque auras fluminum atque stagnorum; minimeque nubili cælo soli aperienti se committerent, ne modo frigus modo calor moveat: quæ res maxime gravedines distillationesque concitat*: “to guard against the noon sun, with
 “ the morning and evening cold, as well as the
 “ air which comes off from rivers or stagnant
 “ waters; and not in the least to trust themselves
 “ in an open country when there is a cloudy sky,
 “ lest they should contract disorders by the heat
 “ or cold, which occasions more especially colds
 “ and catarrhs, or defluxions.” At the same time it is also evident why Hippocrates^m says, *Frigida, velut nix & glacies, pectori inimica, tusses movent, & sanguinis eruptiones cient, & catarrhos excitant*: “cold things, such as ice and snow, are
 “ inimical to the breast, excite coughs, spittings
 “ of blood and catarrhs.”

The too weak circulation of the humours.] It has always been observed, as we said before upon another occasion, in the comment to § 44. that the power by which the smallest absorbing veins imbibe the humours extravasated into the cavities of the body increases or decreases in proportion

* In dissertat. 3. pag. 100, &c.

¹ Lib. I. cap. 1. pag. 20. & cap. 2. pag. 22.

^m Aphor. 24. Sect. V. Charter. Tom. IX. pag. 209.

portion with the force of the circulation : and this is the reason why in acute diseases, where there is too great a velocity of the circulation, all the parts are dried up ; but, in languid or chronic diseases, the whole body is swelled with humours gradually accumulated. This appears evidently in girls afflicted with the green sickness ; for the whole body is invaded with a white or leucophlegmatic swelling, while there is a languid motion of the humours through the vessels. But when their solid parts are strengthened by the salutary use of chalybeates, more especially dissolved in vegetable acids, and the languid motion of the humours increased, that swelling of the body soon subsides without the use of any evacuations. A too weak circulation of the humours is therefore justly ranked among the causes of a watery quinsy, namely, so far as a phlegmatic or watery humour is accumulated in the body ; but more particularly when such causes concur as determine this humour towards the parts mentioned at §. 788. concerning which causes we shall speak hereafter at §. 799.

S E C T. DCCXCIV.

THE effects of this disorder are a pale cold, and watery swelling ; a compression of the adjacent parts, and a disturbance of the functions performed by those parts before they were compressed.

For what has been said before, it is evident what are the effects of the disorder ; namely a tumor of the affected parts, yet not inflammatory but lax, soft, cold, and watery. Of this kind

ſeems to have been the uvula of Hippocrates ^a, *quando ſummus gurgulio aqua impletur, ejusque pars extrema rotunda & pellucida fit, & reſpirationem intercipit*: “ in which the upper part of the uvula “ is filled with water, while its extreme part, be- “ coming round and pellucid, intercepts the re- “ ſpiration.” The like diſorder is alſo remark- ed by Celfus, as we ſaid before in the comment to § 788. But the ſwelled parts compreſs thoſe which are adjacent, and muſt therefore evidently hinder the actions of thoſe parts.

S E C T. DCCXCV.

FROM hence the ſigns both diagnoſtic (§. 791, 792, 793.) and prognoftic (§. 794.) readily appear.

But the diagnoſis of this diſeaſe is likewise evi- dent from what has been already ſaid. For the ſwelling appears pale and watery to the ſenſes, and is without the ſigns of inflammation; the diagnoſis alſo is confirmed, when it appears from the hiſtory of the diſeaſe that ſuch cauſes have preceded, as we before enumerated at § 793. But the prognofis informs us that (*cæteris paribus*) ſuch a quinſy is leſs dangerous than that which ariſes from inflammation. But the other differ- ences of the prognofis are taken from the known cauſe and ſeat of theſe watery ſwellings. Thus, for example, the cure will be foreſeen to be more eaſily accompliſhed, if the emiſſaries are obſtructed by phlegm than by calculus. The caſe will be much more dangerous if ſuch tumors are ſeated about the larynx, than if they invade the pharynx

or
^a De Morbis Lib. II. cap. 10. Charter. Tom. VII. pag. 562.

Sect. 795, 796. Of a phlegmatic Quinsy. 51

or tonsils. Hippocrates ° seems likewise to acknowledge less danger in this kind of quinsy, when, in treating of the disease uvula, he says, *Si hic morbus per se consistat, minus moritur* : “ If “ this disease be alone, there is less danger of “ it’s being fatal.”

S E C T. DCCXCVI.

BUT the cure is here performed by such things as 1. dissolve or put into motion the obstructing causes, or else remove them by corroding or incision. Hitherto belong emollients, aperients, and relaxing medicines, used in the form of a fomentation, cataplasm, gargle, injection, mouth wash or vapours, to which add frictions, caustics, and the scalpel. 2. By such things as diminish the quantity of the lymph by evacuating in opposite parts ; as is performed by apophlegmatisms, blisters, drying sudorifics applied externally or internally, diuretics of the like nature, and such as purge off water by stool. 3. By abstinence from liquors, with a drying and heating diet. 4. By increasing the force of the circulation by the known remedies (§. 98, 99.)

Every thing that obstructs the free discharge of the lymph, may be the cause of a watery quinsy, as we said before at § 793. and therefore, in order to a perfect cure of this disease, it’s cause ought first to be known; for then it may be determined what method of cure ought to be taken. For, if the cause is such that we may reasonably

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hope

hope to dissolve or disperse it, such things may be used as are adapted to this attention, and exert their efficacy by dissolving concremented humours, or by putting those into motion which stagnate. But if, for example, a calculus lodged in the emissary of the gland obstructs the free course of the lymph secreted, it is very evident, that a resolution of this disorder cannot be expected, but that it is rather necessary to remove the impediment by a prudent incision. Thus also, if a hard scirrhus tumor produces such a quinsy by compressing the veins; an extirpation only of the tumor, or the application of caustics, with great prudence, as directed in the following Aphorism, ought to be attempted.

Emollients, aperients, and relaxing medicines in the form of a fomentation, cataplasm, &c.] These are proper to be applied when there is reason to expect, they may open the obstructed vessels of the glands or their emissaries, so as to restore the free course of the lymph. These are more especially of considerable use in a catarrhus quinsy, when the disorder arises from cold obstructing the orifices of the exhaling vessels. It is a most pernicious method in the common people to attack this disorder with the most heating medicines, namely, because they unanimously allow it to arise from cold; for thus increasing the force of the circulation, and urging the humours against the obstructed parts before their emissaries are open, they often excite a violent inflammation; and from the increased swelling of the parts the disorder slight in its own nature often becomes very dangerous. Such quinsies are most happily cured if the patient takes large quantities of watery drinks made warm, gently aromatized and prepared with the roots of bur-dock, viper's

viper's grafs, goat's beard, vetches, the five opening roots, the three kinds of woods, sanders, saffaphras, &c. (see a formula or prescription of the like medicines in the materia medica of our author corresponding to the fourth number of §. 54.) the diet should consist only of veal broths with endive, lettuce, chervil, &c. abstaining from all acrid, salt, or indigestible food, the patient should continually keep in a warm air; the nostrils, mouth, and fauces should be frequently fomented with the vapours of hot water, or else with gargles, mouth-waters, or fomentations prepared of the like ingredients taken often into the mouth, and retained there a considerable time; a cataplasm prepared of the most emollient ingredients may be applied to the forepart of the neck; and then the pultice being off, the parts may be gently rubbed with soft linnen two or three times in a day. For by all these means conspiring together the emissaries contracted by the cold are opened, all the humours are diluted and attenuated, and the vessels are so disposed as to give them an easy passage, while at the same time by the gentle aromatic stimulus of the forementioned remedies diluted with much water, the body is disposed to a gentle diaphoresis or incipient sweat, which is of the greatest use in these diseases.

But when the accumulated watery humours are collected in the cellular membrane of these parts, so as to occasion tumors, troublesome or dangerous by their magnitude or situation, it is evident that emollient and relaxing medicines are not useful for these, but then rather such things are of service as are recommended in the number following: or if there seems to be danger in delaying, lest that the tumor increasing may cause suffocation, a discharge is to be procured for the

watery humour by the use of caustics or the scalpel. Thus Hippocrates ^p when the tip of the uvula is filled with water, and it's extreme part becoming round and pellucid intercepts the respiration, orders the extremity of the uvula to be taken hold of by the fingers to be pressed up against the palate and then cut in two. And in another place ^q he expressly declares that this incision is performed to evacuate the water, after having first tried gargles, cupping-glasses, &c. Celsus ^r in the like disorder advises the extremity of the uvula to be taken hold of by the pliers and cut off; observing that this method of cure is only to take place when the uvula is distended with phlegm; but that, when it is inflamed, painful, and of a red colour, it cannot then be cut off without danger of an hæmorrhage, as Hippocrates ^s likewise observes; from which place it likewise appears that he made use of the actual cautery in the like phlegmatic distension.

But these tumors are found not only in the uvula but likewise in other parts, and sometimes of such a bulk as to be incurable without an incision. Some months past I had an opportunity of seeing a case of this kind in an honest matron of Rotterdam; she informed me, that about nine weeks before she had slightly injured the lower part of her tongue by biting it, and believed that this gave rise to the disorder. A little after this accident her tongue began to swell, and was so far enlarged in the space of nine weeks, as not only to fill up that whole cavity which is placed betwixt the tongue and interior teeth of the lower jaw,

^p De Morbis Lib. II. cap. 10. Charter. Tom. VII. pag. 561, 562.

^q De Affection. cap. 2. ibid. pag. 620.

^r Lib. VII. cap. 12. No. 3. pag. 445.

^s In Prognosticis Charter. Tom. VIII. pag. 675.

jaw, but likewise to occasion a manifest swelling in the neck. The cure had been in vain attempted by frictions, fomentations, and purging with hydrogogues : but, as there were no signs denoting it to be an aneurismatic tumor as some imagined, I ordered the little prominent tumor under the tongue to be perforated with a lancet, which being done, an incredible quantity of a pellucid humour was discharged, resembling in tenacity the white of an egg : the tumor thus immediately subsided, the swallowing before obstructed was now perfectly free, and, by the use of an astringent fomentation retained in the mouth for some days, the patient was perfectly cured, so that no remains of the tumor were visible some months after.

2.] It was said before at § 791. that a lymphatic tumor of the parts subservient to respiration or deglutition occasions a watery quinsy ; and that then there is generally at the same time an obstacle impeding the free excretion of the lymph, as was made evident at § 793 : every thing therefore which lessens the quantity of lymph will be of use, by discharging from the body the matter increasing these tumors. But such things will be more especially useful where there is a redundancy of lymph in the body, as we observe in weak and leucophlegmatic people. For when the disease is occasioned only from a compressure of the veins, or an obstruction of the excretory ducts, it is evident that little can be expected from this method. Every thing therefore which dissipates the accumulated water from the body by exciting sweats, or evacuates it by urine or stool, may be here of service. But sudorifics are either such as supply a large quantity of water to the blood, after which the cutaneous vessels be-

ing relaxed by the warmth of the bed, a discharge of the ingested water is procured from the whole surface of the body, that together with these sweats something noxious may be discharged from the habit; or else there are other sudorifics used, which do not increase the quantity of water in the blood, but by their stimulus augment the velocity of the humours, and by that means procure a much greater quantity of the fluid to be secreted to be applied in the same space of time to the secretory organs of the skin. But sometimes both these kinds of sudorifics are joined together to advantage, when penetrating and warm spices are administered, infused in a large quantity of water. But in this case, since there is already a redundancy of watery humours in the body, not the aqueous but only the dry sudorifics are convenient, namely such as act by exciting a greater heat, and by increasing the velocity of the humours. These are either external, as heat of the bed, a hot air, the application of hot cloaths to the body, the vapours of burning spirit of wine surrounding the naked body every way covered by bed-cloaths; than which last, we are hardly acquainted with a more powerful sudorific, since at the same time that it administers a sufficiently intense heat, it relaxes and renders the whole surface of the skin extremely perspirable by the most penetrating vapours: but, concerning this, see what has been said before at §. 529. N°. 2. Or else they are internal, which by a warm spiciness powerfully move the humours throughout the whole body; which sudorifics may be seen enumerated in the place before cited*. But it is sufficiently evident, that such medicines cannot take place where there is the least reason to suspect

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an inflammation ; for they are only useful when there is a coldness, inactivity, and redundancy of lymph in the body. The same is also true, with respect to diuretics used for evacuating the redundant quantity of the lymph ; namely to chuse such as act by a stimulus, and not by increasing the quantity of fluids. But hydrogogue purgatives, as they are called, which evacuate a considerable quantity of thin water from the bowels, are here likewise of the greatest use, such as the roots of jalap with scammony, colocintida, &c. for by these the body may be so suddenly emptied, that from the depletion of the larger vessels the bibulous veins will speedily drink up the lymph extravasated into the cavities of the body, as we shall declare more at large hereafter, when we come to treat of a dropsy.

But all the remedies hitherto mentioned do indeed evacuate the redundant lymph from the whole body, but do not directly relieve the part affected ; and therefore, there are other remedies recommended in practice for the cure of a watery quinsy, which evacuate the lymph chiefly either from the parts affected, or at least from those which are next adjacent. Hitherto belong apophlegmatisms, remedies so called, because they derive a greater quantity of phlegm or mucus from those parts of the body, which are naturally destined to secrete such a mucus for particular uses ; but these are principally applied, either to the nose or mouth. It is well known from anatomy, that all these parts receive their arterial blood from the external carotid, from whence this mucus is secreted ; and therefore when these parts are thus irritated by the more acrid medicines so as to distil a greater quantity of a serous fluid, there is reason to hope it will relieve the parts swelled in a
watery

watery quinsy, and divert the quantity and impulse of the humours from them. For this purpose, therefore the internal parts of the nose may be relaxed by the vapours of hot water, or they may be stimulated by the green leaves of lavender, marjoram, pennyroyal, and the like, twisted together and thrust up the nostrils. Or the same herbs may be dried, ground to a powder, and snuffed up the nose, or the powder of tobacco will serve for the same purpose in those who are not accustomed to it. This intention will be likewise answered by the more acrid spices chewed in the mouth, that, by irritating the excretory ducts of the glands, they may discharge a great quantity of saliva and mucus; as may be best done by mixing, for example, an ounce of mastic or wax with a drachm or two of the root of pellitory, ginger, pepper, &c. forming them into little cakes, to be continually chewed and rolled about the mouth; for, while the mastic and wax are ground betwixt the teeth without being dissolvable in the saliva, the acrid spiciness mixed with them breathes out, and, by continually stimulating the internal parts of the mouth and tongue, draw forth an incredible quantity of saliva and mucus.

Hitherto likewise belong blisters applied to the neck, or betwixt the shoulders, behind the ears, &c. namely, inasmuch as they diminish the quantity of lymph by raising the cuticle into blisters full of water, and at the same time by irritating the adjacent parts affected divert the impetus of the humours towards other parts. See what has been said upon this subject at § 396. N^o. 4.

3.] The reason of this is evident enough: for it would be in vain to evacuate watery humours from the body, unless care be taken at the same time to avoid repletion with such liquors.

It

It is likewise evident, that a warm and dry diet is justly recommended here, lest the material cause of these diseases should be collected in the bodies of people who are naturally prone to them; but then these are not at all sufficient to remove the present disease, which requires a sudden evacuation of the lymph collected in the swelled parts, which cannot be expected barely from a drying and heating diet; but, what particulars ought to be used in such a diet, we shall afterwards declare when we come to treat of a dropfy at § 1249.

4.] Since a weaker circulation of the humours is reckoned among the causes of a watery quinsy, § 793. namely, inasmuch as from thence there is an accumulation of watery humours in the body, which is the material cause of this kind of quinsy; the reason is evident why such things are recommended in the cure of this disease as increase the force of the circulation. But, as we said before in the preceding number of this Aphorism, those remedies which increase the circulation do not so much regard the cure of the present disease as the preventing of it when it is about to happen. But in the mean time those recommended at the second number under the present Aphorism increase the motion of the humours through the whole body, and particularly through the parts to which they are applied; and therefore they likewise conduce to this purpose. But in what manner, and by what remedies the too sluggish motion of the humours may be increased, is evident from what has been said at the sections cited in the present Aphorism; more especially if you consult what has been said upon this subject at number 2, 3, and 4. of § 28. as also what has been said in the comment to § 611. concerning the too weak
or

or sluggish febrile motion of the humours to be excited.

Of a scirrhus QUINSY.

SECT. DCCXCVII.

BUT if the glands before described (§ 788.) are invaded by a scirrhus tumor much increasing, it is known by the signs of a scirrhus (§. 392.) and, from the knowledge of the situation of this tumor, a future quinsy is foreseen, and the present one is discovered; in this case, if an extirpation is practicable, that is the only safe remedy; or else, for internal scirrhus tumors seated about the fauces, caustics are to be tried with great prudence.

That a scirrhus frequently follows an inflammation in glandular parts, was made evident when we treated of an inflammation terminating in a scirrhus at § 389. But since there are such numerous glands seated about the parts serving to respiration and deglutition, it will not seem wonderful to any, that a quinsy should sometimes follow from such a cause, which is then said to be scirrhus, when the hard and indolent swellings of the glands, seated about the forementioned parts, either hinder or destroy their free action. But when we treated professedly of a scirrhus, those signs were enumerated, by which a scirrhus tumor present might be known and distinguished from other tumors (see § 487.) It was then likewise made evident, how difficult
it

it is to cure this disorder; and it was likewise cautioned, that the method of cure by dispersion cannot be well attempted but in a recent and benign scirrhus not yet perfectly indurated. Moreover, we observed, that this method of cure requires the scirrhus to be seated in a convenient part, and for the patient afflicted with the disorder to be otherwise of a very good habit of body. We likewise in the same place proposed the most efficacious remedies that could be applied for dispersing such scirrhus concretions; all which may likewise take place in a watery quinsy, as long as there are any hopes remaining of obtaining a dispersion. But it must be observed, that a regard ought always to be had to the situation of the parts affected with those that are circumjacent: thus for example, the glands of the neck being scirrhus admit of frictions, the steams of vinegar, emplasters, &c. which cannot be applied to the tonsils affected in like manner.

But when a scirrhus is no longer resolvible, and in the mean time by it's bulk it injures the respiration or deglutition, the patient is in a very bad condition, because such tumors usually increase by delays, and consequently all the symptoms become gradually more fatal. Nothing therefore but an extirpation can here take place, which is best performed by the knife, since caustics and cauteries are dangerous, unless the whole scirrhus tumor can be destroyed at one and the same time, as we declared more at large at § 490. N°. 2. But where an extirpation by the knife cannot be performed, as being forbid by the situation of the affected part with other circumstances, as when such tumors are seated within the fauces, either the unfortunate patient is to be left to his fate, or such methods sometimes put in practice by physicians,

physicians, which might be justly condemned as rash even in slighter disorders. *Satius enim est anceps auxilium experiri, quam nullum*: “ But it is “ better to try a doubtful remedy than none at “ all,” as Celsus tells us “. Actual and potential cauteries have been boldly applied by some to such tumors; and though they are attended with great danger, yet we are assured from observations that they are not always followed with fatal events. The celebrated author of these Aphorisms knew a certain doctor for cattle, who was celebrated for his audacious cures of this kind, namely, by corroding such scirrhus tumors seated in the fauces by the application of a liquor of the common caustic of the surgeons, which, being made of quick-lime and pot-ash, speedily runs per deliquium, unless it be well secured from the air. Oil of tartar per deliquium, recommended for this purpose in the materia medica of our author corresponding to the number of the present Aphorism, is both milder, and may be applied with less danger. The spirit of sea salt, prepared in the shops by distillation from equal parts of the salt and oil of vitriol mixed together, may here likewise be used, as it most powerfully resists all putrefaction, and as a cancer itself, which is so easily irritable and malignant, appears capable of supporting the action of the spirit of sea salt well diluted, as we observed before upon another occasion in the comment at § 509. But these corrosives being received upon a pencil of scraped lint are to be conveyed through a hollow tube to the part affected, to avoid injuring the parts adjacent. After the use of them the eschars are to be mollified by the most emollient decoctions continually held in the mouth, and, after they have

• Cels. Lib. II. cap. 10. pag. 79.

have fallen off, the corrosive liquors are to be again applied, as they may be alternately to advantage, till the whole scirrhus tumor is perfectly destroyed. It is evident enough that the greatest prudence is here necessary, carefully to inspect the parts after every application of the caustics, to discover whether there is any inclination towards a cancerous malignity; for then prudence persuades us to abstain from the farther use of them. The celebrated Boerhaave freely confesses, that he has often stood doubtful in such a case, when he hardly durst apply these caustics for fear of a cancer; and yet it seems very hard to deliver up the patient to most certain death, without trying this method.

But how much may be sometimes effected towards a happy cure, in diseases almost desperate from bold attempts, is evident from the following observations. A person of distinction had a soft fleshy excrescence growing out from the upper and back part of his palate bone, which bone was believed to be foul or carious by Ruyfch, * and therefore he concluded, that the threatening disorder ought immediately to be eradicated by the knife and actual cautery. The patient submitted to the severity of this method without delay. After some of the grinding teeth were extracted, which seemed to obstruct the operation, the fungous flesh was cut off by a sharp scalpel shaped agreeable to the arched figure of the palate, and, soon after, the parts were burnt several times by the actual cautery. The patient courageously supported all this, and, by lifting up his finger, gave notice when he began to perceive danger of suffocation from the smoke, or stinking fumes of the burnt parts; and, after he was put to bed, he spoke

* Observat. Anat. Chirurg. centur. obs. 84. pag. 45, &c.

spoke very amicably to Ruysch and the other two expert surgeons who performed the operation. Upon the day following, the patient was found with a fever, and a considerable swelling of the whole head, which yet were soon removed by the use of antiphlogistic remedies. After the eschars were fallen off, a portion of spongy flesh grew out again, and was removed by a repetition of the cautery, followed as before with a fever and swelling of the head. But at length the patient perfectly recovered, and lived in health for many years after, free from the complaint. But Ruysch^y testifies he had learnt by experience, that the knife alone is not sufficient for removing such tumors, which he found to require burning by the actual cautery after the extirpation. For, an old woman having a malignant scirrhusity in the tongue, it returned again after repeated extirpation, whence he concluded, that nothing remained but to cauterize the wound after incision; which being done, the cure happily succeeded.

Celsus^z orders scirrhusities of the tonsils following an inflammation to be extirpated, whence it would seem, that the like treatment was in use among the antient physicians. But being ignorant of the structure of the tonsils, he says, *cum sub levi tunica sint, oportet digito circumradere & evellere*, “That as they are seated under a thin membrane or
“tunic, they ought to be rooted out and extract-
“ed by the finger.” As if the tonsils were solitary glandules, only invested on all sides with the cellular membrane; whereas, at present, we know they consist of the mucous membrane of the fauces complicated into hollow spires. But that this kind of enucleation of the tonsils did
not

^y Ibid. observ. 76. pag. 70:

^z Lib. VII. cap. 12. No. 2. pag. 445:

not always succeed, is evident, because he soon after subjoins, *Si ne sic quidem resolvuntur, hamulo excipere, & scapello excidere oportet*: “ That, if
 “ they cannot be thus freed, they must be
 “ taken hold of with a hook, and cut out by the
 “ scalpel.”

But all these methods cannot be attempted, unless the scirrhus tumor is seated in a part accessible to hands and instruments. There do still more melancholy cases occur, in which the tube of the œsophagus, being swelled and rendered scirrhus within it's own proper substance, has by degrees been streightened and at length entirely shut up; as also from latent scirrhus tumors in the adjacent parts, gradually more and more compressing it. I have frequently seen and lamented these cases, and am certain that all physicians who have considerable practice must have frequently met with the like, tho' the unfortunate patient in the mean time finds no relief from all the methods proposed almost by every physician he consults. But this fatal disease usually appears first with a kind of difficulty in swallowing solid food, the patients perceiving a kind of slight obstruction in the œsophagus, at various heights in different patients, and are generally able to point with their finger to the part where the food swallowed is for a little time obstructed before it slips down into the stomach. Sometimes the disorder continues in the same state for several months, as I have sometimes known it even for two or three years, so that the patient has been able to swallow meat, bread, and the like cut very small, though, but slowly; but they have as yet been able to swallow liquid aliments easily enough. But afterwards by degrees the tube of the œsophagus has become more and more obstructed, so that they have not

V O L. VIII. F been

been able to get down the least particle of bread; but, if the patient struggles, the food stays in the œsophagus, and after some minutes is brought up again through the mouth with a considerable quantity of mucus. Hence it is, that the patient ascribes the disease to tough phlegm as the cause, and uses all his endeavours to incide and discharge that phlegm. But it is evident enough that the mucus of the mouth, fauces, and œsophagus are here only accumulated by not being able to pass into the stomach, and therefore that the phlegm is really the effect and not the cause of this disorder. As the disease increases, at length even liquors cannot pass, but are for the most part brought up again; and at last the patient falls away by a slow marasmus, after suffering a long time the punishments of Tantalus. Frequently in these unfortunate patients the upper part of the œsophagus is so far dilated when fluids cannot be swallowed, as to be able to contain several ounces and appear turgid on each side the windpipe, until the fibres of the œsophagus, irritated by too great a distension, are at length suddenly convulsed, and expel upward the contained liquor.

There is a quinsy of the like kind mentioned in Galen;^a for thus he describes it: *Si vero tumor aliquis ex non calidis fuerit, sine febre, & calore & siti, deglutitionis inaequalitas fit, retentis in parte quadam alimentis; praesertim si majora aut solidiora deglutiantur, acceditque dolor aliquis exiguus:* “ But, “ if a tumor not of the inflammatory kind arises “ without a fever and without heat or thirst, it occasions an inequality in swallowing, the aliments “ being retained in some part, more especially if large “ mouthfuls

^a De Locis Affectis Lib. V. cap. 5. Charter. Tom. VII. pag. 491.

“ mouthfuls of more solid foods are swallowed,
 “ and a slight pain likewise attends.” He relates,
 indeed, the case of a young man who was cured
 of the like disorder ; but, as the history of the
 disease informs us, the tumor in the œsophagus
 was not scirrhus but purulent or suppurative. For,
 he says, *Quum aliquando hujusmodi symptomata*
longo temporis spatio apparuissent, accedente nonnun-
quam ephemera febre, nonnunquam etiam horrore,
quum conjiceremus abscessum concoctu difficilem esse in
gula, accidit procedente tempore, ut laborans ipse
ruptionis sensum perciperet, & deinde pus evomeret,
non tantum eodem, sed postero quoque & tertio die;
deinde succedebant ei omnia ulceratæ gulæ signa :
 “ That when the appearance of these symp-
 “ toms had continued for a considerable time,
 “ sometimes attended with a diary fever, and
 “ sometimes with horrors or shiverings, whence
 “ we conjectured the abscess in the gula was dif-
 “ ficult to concoct or digest ; it happened in
 “ process of time that as the patient was straining
 “ he perceived a sense of it’s breaking, and after-
 “ wards vomited up matter, on the same and fol-
 “ lowing, as also the third day ; and then suc-
 “ ceeded all the signs of an ulceration in the
 “ gula.” But he observes that this patient very
 difficultly escaped, for a long time of which he was
 afflicted with the disease, as he was a youth ; but
 that people in years afflicted with the like disease
 generally perish. For, so long as there are hopes
 of bringing the tumor to suppuration which
 compresses the œsophagus, there is a possibility
 of the patient’s recovery ; but, when a scirrhus
 here formed is gradually increased, it is evident
 enough that there is hardly any room to hope.

In some patients I have been able to perceive a
 scirrhus hardness of the œsophagus, by thrusting

my fingers deeply behind the windpipe, but, in most patients, nothing more appears than a difficulty in swallowing. Sometimes I have been also able to perceive the glands of the neck swell'd, as also the thyroide gland; but then the situation of the swell'd glands did not seem to be such that the disease may be ascribed to them as the cause. In an old woman afflicted with this kind of quinsy with a swelling of the thyroide gland, the tumor of that gland began to soften by the long continued application of vinegar of squills with sal ammoniacum, and a galbanum plaster with frictions; but, after the application of maturing cataplasms, there was the fluctuation of a liquor perceivable, and, upon opening the part with a lancet, there was discharged a quantity of thin ichor, intermixed with small grainlike masses; and, although, the patient seemed to find some relief from thence, yet the disease proved equally fatal in the event, as I have observed in others. Hence I learnt, that a tumor of this gland does sometimes indeed attend this kind of quinsy, but yet that it is not the sole cause; the truth of which is also confirmed from the situation of the gland, which receives it's denomination from the cartilage upon which it is incumbent.

The causes observed to precede this disease are not very numerous; sometimes immoderate drinking of spirituous liquors has preceded,^b nor does it seem improbable that from this abuse the œsophagus may be hardened into a scirrhus, since the fermented spirits are capable of turning the serous parts of the blood into a hard coagulum, and of contracting the solid parts. But in the mean time it must be confess'd, that, among the great number of people who daily indulge them-

^b Medical Essays Tom. II. pag. 324.

themselves in drinking these liquors, there are very few to be found afflicted with this disorder. I have observed the deglutition hindered in a healthy virgin, the disorder gradually increasing without any visible tumor, only from exposing her neck for a considerable time to the cold wind strongly blowing; for, by looking out of a window, she had exposed herself for the space of two hours to the northwind. In this case the disorder slowly increasing destroyed the patient, most remedies being tried to no purpose. Whether or no the drinking of coffee, tea, or the like very hot, or almost scalding, may not be the cause of such disorders by shrinking up the solid parts and coagulating the fluids? at least, this does not seem improbable. But it also appears that this disorder is frequently observed, though by an accurate observation nothing could be discovered to which the cause of it might be ascribed with any probability.

I have myself tried various remedies in this kind of quinsy, and have known a great number used by other physicians of the greatest skill, but all without success. The tartarus tartarizatus and regeneratus, the most penetrating soaps, as that of Starkey, composed of ætherial oil of turpentine and salt of tartar, Helmont's tincture of salt of tartar, sal ammoniacum, and it's spirit saturated with distilled vinegar, &c. which are commonly used with so much success for dissolving concretions in the human body, being in this case both externally as well as internally applied, have either proved of no use at all, or else, when the disorder has seemed to be a little relieved, the same calamity has soon after returned, and has no longer yielded to the same remedies, tho' vigorously pursued and long persisted in. Mercurial unctions, emplasters of the ferulaceous

gums with mercury, I have known applied to the neck, and joined with hydrogogue purgatives, and even a salivation itself, but without success. Lubricating and emollient decoctions with oil of almonds, and the like, have yet been serviceable in these cases, by lubricating and procuring an easier passage to such aliments as were yet capable of being swallowed; yet have they conducted nothing to the radical cure of the disorder. I know a surgeon, who, by tying a piece of sponge to a probe of whalebone, endeavoured by force to open a passage to the stomach, but with the very worst success, since the parts thus irritated and rendered painful increased the swelling. I have known the fresh gathered roots of black hellebore with those of bryony beat to a pultice, with vinegar of squills, and an addition of sal ammoniacum, which was applied round the neck without success, although a certain cure of the most obstinate disease was from thence promised.

But, if we consider what is discovered upon opening bodies deceased of this kind of quinsy, no-body will wonder why the most obstinate disease eludes the virtues of the most efficacious remedies. Tulpius^e has observed that sometimes a hard tumor insinuates itself betwixt the windpipe and œsophagus, so as to be oftentimes conspicuous externally, and sometimes to lie concealed within. He saw this disorder attended with a slow marasmus in a widow, which proved fatal by denying a passage to the food and drink into the stomach. Upon opening the body, he found a tumor of a livid colour like a cancer, spreading it's roots through every part of the neck, but more especially round the gula, which was so closely pressed together, that various filaments

^e Observat. Medic. Lib. I. cap. 44. p. 84, &c.

ments grew out from it's complicated tunics, so far obstructing this pervious tube by their intricate texture, that there was not space enough to transmit a probe. Moreover the glands seated behind the œsophagus in the middle of the thorax were greatly swelled. In the body of a man deceased of the same disease, after various remedies tried in vain, there was found a hard glandular tumor in the cavity itself of the œsophagus, beginning about the middle of it, and extending about the upper orifice of the stomach, but so exactly filling the whole cavity of the gula, that it was scarce possible to thrust a probe into the stomach^d. In another body the œsophagus was found changed in it's lower part into a white, thick, and scirrhus substance, in which substance were many small abscesses containing matter, each of which opened by a distinct orifice into the cavity of the gula. The upper orifice of the stomach and the adjacent part of the stomach itself were affected in the same manner. In another there was a large steatoma, so hard, that it could scarce be cut with a knife, filling a great part of the thorax, adhering to the pleura, mediastinum, and pericardium, as well as to the œsophagus, together with which it descended through the diaphragm, where it not only compressed the œsophagus, but, running along the back of the stomach to the pylorus, it likewise compressed the opening of the pylorus itself by it's mass. The unfortunate patient^e in whose body this large tumor was found had been a long time afflicted with a difficulty of swallowing, and, towards the latter part of his life, every thing taken in was immediately rejected again by the mouth, though they were taken in the very smallest quantity at a time. In

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another.

^d Medical Essays, Tom. II. pag. 324. . ^e Ibid. 332.

another, the œsophagus † was found cartilaginous almost throughout it's whole extent, from as high as the calvicles down to the stomach, and so much contracted that there was scarce room to transmit a hog's bristle ‡. In a man upwards of fifty years old, who had a long time perceived, that the food and drink taken in was obstructed about the upper part of the sternum, after which it would sometimes pass by the obstacle there seated into the stomach, but more frequently after staying some time and exciting a cough, or sickness, it would be again expelled through the mouth, together with a great quantity of tough phlegm; after the patient's death the right side of the lungs was found scirrhus in it's upper part, thrusting the mediastinum and œsophagus towards the left side, and so much compressing the cavity of the œsophagus, that the tube appeared greatly dilated above the obstruction by the aliments which had been retained there in order to be swallowed, and towards the upper part of the neck it again retained it's natural dimensions. For this last observation I am indebted to the learned Dr. Anthony de Haen, who exerts himself in the practice of physic with great applause at the Hague, and with indefatigable industry takes every occasion to inquire into the latent causes of diseases in dead bodies, and who opened this patient after his decease, before the celebrated Schwencke, professor of anatomy and surgery.

From all these instances it is sufficiently apparent, that such causes of a scirrhus quinsy have been found in dead bodies as are justly to be esteemed incurable; and that we can only hope for a cure, when such scirrhus tumors are so seated,

† Ibid. Tom. III. pag. 353. &c.

‡ Memoirs de l'Acad. Royale de Chirurg. Tom. I. p. 489.

seated, that they may be removed either by the knife or cautery. Nor is what we have here advanced opposed by the following history, which indeed informs us, that a disorder nearly related to that described may be supported a long time, when by art a passage was procured for the swallowed aliments to descend into the stomach; but yet the cause of this disorder was by no means removed, concerning which Willis^h doubted whether it ought to be referred to a palsy, or to a preternatural tumor in these parts. A strong and otherwise healthy man was frequently if not always subject to vomit up all sorts of food soon after it was swallowed; and at length the disorder increased so far, that, when he eat after great hunger, the whole œsophagus would be indeed filled, but none of the aliments descended into the stomach, being soon after expelled upward. After various remedies had been tried without success, and the patient was about to perish with hunger, Willis advised him to thrust a sponge fastened to a piece of whalebone down the œsophagus immediately after taking food and drink, by which means a passage might be forced for it to descend into the stomach. This method indeed succeeded, but so that the unhappy patient was obliged to make use of it every day, or else perish with hunger. But Willis observes the patient continued to take food in this manner for the space of sixteen years and was then living and well, when he wrote the account.

But this kind of quinsy more seldom intercepts the respiration, as it most constantly does the swallowing; for the cartilaginous parts of the windpipe hinder the passage of the air from being so easily shut up, even though the back part
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^h Pharmaceut. ration. Tom I. Sect. II. cap. 1. pag. 45.

74 Of an inflammatory Quinsy. Sect. 797, 798.

of the windpipe, which is membranous, should be compressed by a swelling of the œsophagus or scirrhus tumors of the adjacent parts. But, if a tumor is thus formed in the cavity of the windpipe itself, it so torments the patient with a violent and incessant coughing, as proves destructive before he can be suffocated by such a scirrhus tumor slowly increasing. Add to this, that the œsophagus oftener transmits acrid or rough substances, drinks very cold or almost scalding, &c. whence it is most frequently exposed to the injurious causes, as the nerves dispersed through the membrane lining the larynx and windpipe are so irritable, that they hardly admit any thing but air without danger of suffocation, so that, if any thing of a foreign nature enters, it is immediately expelled by exciting a violent cough.

Of an INFLAMMATORY QUINSY.

S E C T. DCCXCVIII.

BUT, when the glands or muscles before-mentioned (§. 788.) are invaded with an inflammation, it then produces a disease which is properly to be referred to quinsies, because of it's severe, swift, and often insuperable violence by which it proves fatal.

After laying down the history of fevers in general, and likewise the principal febrile symptoms, we took a view of what was principally to be remarked both in continual, remitting, and intermitting fevers. These being finished, we came next in order to acute febrile diseases, which are indeed attended with a fever, but have likewise
a par-

Sect. 798. Of an inflammatory Quinsy. 75

a particular inflammation of this or that organ. Among these last an inflammatory quinsy justly deserves a place, as it very frequently occurs, and often runs through it's course speedily and with the greatest danger; insomuch that it is therefore justly ranked among the most acute diseases, as it suddenly suffocates the patient, after the most efficacious remedies have been tried in vain. But properly we ought to have treated of an inflammatory quinsy amongst acute febrile diseases; only as the name quinsy is given to all disorders injuring the respiration or deglutition, provided their cause is seated above the stomach and lungs (see §. 783.) therefore it seemed necessary to treat of those kinds of quinsies which happen without inflammation attending, partly that these diseases may be known and cured, and partly that these inflammatory quinsies may be better distinguished from the rest of the kinds of this disorder, since, from the great danger and swiftness of it, it is often necessary to apply all the most powerful remedies at one and the same time.

It was said before at § 787. that the principal difference of quinsies is taken either from the nature of the tumor obstructing the organs of respiration or deglutition, or else from the part itself in which the tumor is seated. The nature of the tumor is inflammatory in that kind of a quinsy concerning which we are here to treat; and therefore the knowledge and cure of it is to be derived from what has been said under the head of inflammation. But yet a considerable difference takes place both in the prognosis and cure of the disorder, according to the difference of the part in which the inflammatory tumor obstructing the respiration or deglutition is seated; and

76 Of an inflammatory Quinsy. Sect. 799.

and therefore it was necessary for us to treat of this disorder in this place.

We shall therefore first see what causes have been observed to excite an inflammation in the parts before mentioned (§. 788.) after which we shall consider the various symptoms of the disease, so far as they depend upon the different parts affected; and at the same time from thence we shall deduce the prognosis, and, lastly, we shall treat of such things as are necessary to be observed in the cure, which are partly to be derived from the general method of treating an inflammation and in part from the known use of the affected organs.

S E C T. DCCXCIX.

TH E cause of this disorder, (§. 798.) in general, may be, 1. Every thing producing an inflammation (§. 375. to 379.) 2. Every thing which determines the causes of inflammation, more especially towards the parts described (§. 788.) particularly to the larynx, pharynx, os hyoides, and the muscles of these parts, together with the upper part of the windpipe: such are an inflammatory disposition peculiar to young people abounding with blood and of a ruddy complexion; a frequent and violent exercise of these parts either by speaking or preaching in publick; singing, crying out, hard riding on horseback against a cold wind, the blowing of trumpets or other musical instruments, violent labour or exercise in a cold air, a great or sultry heat, followed with an intense coldness, in the spring time; a dryness of the fauces
from

from the air received, and expelled in the scorching heats of the sun, or in an inflammatory fever.

1. It was demonstrated in the history of inflammation at § 373. that every part of the body in which there are reticular distributions of the sanguiferous or lymphatic arteries may be invaded with inflammation; and therefore it is evident enough, that the same may take place in those organs which serve for deglutition or respiration. All the causes therefore of inflammation, which have been enumerated and explained in the sections cited in the text, ought to be referred to this place.

2. But besides the general causes of inflammation, which may excite that disorder in any part of the body, it is to be observed, that there are some other causes concurring to produce an inflammatory quinsy, which determine the action of the forementioned causes rather towards the organs of respiration and deglutition, than towards other parts of the body. But these last causes are such as either apply the inflammatory causes to these parts, such as singing, crying out, &c. concerning which we shall immediately treat, and whose action is easily understood; or else we know by an observation of effects only, that there are certain causes which determine the inflammatory matter towards these parts, though we do not understand the reason why this determination is made. Thus for example, when inflammatory quinsies spread epidemically, the patient has a cold fit and trembling at the first attack of the disease, and soon after a fever follows, which is sooner or later attended with a painful swelling and inflammation of the fauces; and in
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this caſe I have often obſerved the fever ceaſe, as ſoon as the inflammatory matter has been depoſited towards theſe parts : and if this kind of quinſy has proved curable by mild reſolution, nothing more of a fever has followed afterwards. The cauſes therefore of the quinſy ſeem to be determined by the preceding fever towards theſe parts, in the ſame manner in epidemical quinſies, as we obſerve in an epidemical pleuriſy, phrenzy, &c. where the morbid matter is depoſited by the fever upon the ſide of the thorax or towards the head. But who can explain from the principles hitherto known and demonſtrated in the art, why the morbid matter ſhould be determined rather to this or that particular part, according to the different diſpoſition or nature of the epidemical conſtitution ? However, it is ſufficient for the phyſician to know this by a faithful obſervation, though he is not acquainted with the manner how it is brought about. See what has been ſaid upon this ſubject in the comment to §. 593.

But hitherto likewise is to be referred the particular diſpoſition of the patient, by which he is inclined to inflammatory diſeaſes, more eſpecially in theſe parts. Thus I have known many who are uſed to be taken with a quinſy twice every year, though generally ſlight and curable by diſperſion, though ſometimes likewise inclinable to ſuppuration. Sydenhamⁱ aſſures us from his own obſervation, that young people of a ſanguine habit, particularly thoſe of a ruddy countenance, are more eſpecially obnoxious to theſe diſeaſes.

But likewise a violent and frequent exerciſe of theſe parts conduces much to excite this diſeaſe, as appears from daily obſervation in thoſe who from their buſineſs are obliged to ſpeak aloud for
a long

ⁱ Sect. 6. cap. 7. p. 357.

a long time together. For the same reason, crying out aloud, singing, and the blowing of trumpets, or other musical instruments, are hitherto referred. For we see that in all such people the face, lips, and eyes, are turgid and suffused with blood, while a greater heat is communicated to the whole body, and especially to the upper parts; and hence those who harangue with vehemence have their face run down with sweat. All these particulars teach us that the blood is moved thro' the vessels of these parts with a greater quantity and impetus, and that the smaller vessels, being dilated, admit the red blood, which they naturally ought not to receive, and therefore an inflammation may be thus easily produced by an error of place; more especially if the person being, heated by his harangue, soon after carelessly exposes himself to the cold air, from whence we are assured from many sad instances, that fatal diseases arise. For how dangerous it is to admit the contrary, when the vessels are relaxed, or the humours rarified by an increased motion, has been said before upon another occasion in the comment to §. 118: It was therefore not without the face of truth that Demosthenes dissembled this disease, when the day before having harangued smartly in the behalf of the people of Miletus, before the people of Athens, on the day following he came abroad with a great quantity of wool fastened about his neck and throat, giving out that he was afflicted with a quinsy; but one of the people, craftily suspecting the fraud, cried out, he is not afflicted with a synanche, but with an argyranche, since, being corrupted with money, he is unwilling to speak against the Milesians^k.

Hard

^k A. Gellii Noct. Attic. Lib. II. cap. 9. p. 269.

Hard riding on horseback against a cold wind, violent labour, or exercise, in a cold air.] If any one rides swiftly on horseback even in calm weather, he will perceive a kind of wind against him, since the air resists the bodies moving through it so much the more in proportion as they are moved with a greater celerity. But every one perceives a greater coldness when a wind blows, because the air which surrounds us being warmed by the heat of our body is every moment blowed away, and immediately a colder air succeeds in it's place. When therefore a person rides violently against the wind, the cold air enters the fauces every moment, and at the same time the vessels of these parts are powerfully compressed by the resisted air directed against them in an opposite motion, by which, as well as the coldness, they are too much contracted. The particles of the humours therefore being concreted or joined together (see § 117.) by the cold, and the vessels constricted by the same means, assisted by a violent pressure of the air against these parts, will occasion obstructions, while at the same time the motion of the humours being increased through the vessels by the exercise of riding (for people grow hot by swift riding on horseback even in the winter's cold) augments their impetus against the obstructed part, and therefore may produce an inflammation (see § 371.) This is the reason why those who are obliged to make long journeys on horseback in the winter time are so frequently seized with quinsies, peripneumonies, pleurifies, and the like inflammatory diseases. For the same reason likewise, violent exercise, or labour in a cold air, occasions people to be frequently seized with an inflammatory quinsy; for, although we can defend our parts of the body

against

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against the cold by cloathing, yet the constant necessity of breathing gives the cold air an opportunity every moment to affect the internal parts of the mouth and fauces, where the vessels, almost naked without being covered by the skin, are exposed nearly to the immediate contact of the air. But since the motion of the arterial blood being increased by exercise dilates the beginnings of the lymphatic arteries, so that they admit the grosser red particles of the blood (see §. 278. and 118.); it is evident from what has been said, how injurious the cold air may then prove by contracting the vessels, and disposing the particles of the blood to unite or cohere together more powerfully.

Sultry heat followed with an intense coldness in the spring time.] We are taught by the constant observations of all Physicians, that sudden heats or colds, succeeding each other in the air, produce numerous diseases. Hence Sydenham¹ observes, that inflammatory diseases rage the most at that season of the year, when, the spring being far advanced, the summer heats begin; and, more especially of a quinsy, he observes, *quolibet anni tempore aggreditur, maxime tamen illo, quod ver atque aestatem interjacet*: ‘That, indeed, it ‘invades at all seasons of the year, but more ‘especially betwixt the spring and summer.’ Hence Hippocrates^m ranks a quinsy among diseases of the spring. For the preceding cold increases the action of the solid fibres upon the humoursⁿ by shortening them, rendering them thicker and stronger, and therefore, at the same time it renders the humours more dense and com-

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pact,

¹ Sydenh. Sect. VI. cap. 7. pag. 357.

^m Aphor. 20. Sect. III. Charter. Tom. IX. pag. 114.

ⁿ H. Boerhaave Instit. Medic. §. 747.

fact, as we proved before in the comment to § 52. When therefore sudden heat follows after a cold season has preceded, the most fluid and moveable parts of the humours are dissipated from the body, the solid parts are weakened^o, and by that means an opportunity is given for the suddenly relaxed lymphatic arteries to admit the grosser parts of the blood by an error of place, after they had been first concreted together by the preceding cold; from whence obstruction and inflammation may easily arise, more especially about the organs of respiration and deglutition, which are the most exposed to the changes of the air. The number of these diseases is perhaps increased in the spring time, because the warmth of the day is often followed with a sudden and intense cold towards the evening, for this is a very dangerous alteration, when cold follows sultry heat; inso-much that Sydenham^p does not hesitate to say, that more people have perished from this cause than by the sword, plague, and famine together. For the same reason another was always careful to admonish his friends in a particular manner, not to be too hasty in leaving off the cloaths which they have been accustomed to wear in the winter, and cautiously to avoid cold when they are heated by exercise. I have reason to lament the loss of a worthy citizen of this place, Leyden, by a quinsy which proved fatal on the fourth day from this cause, namely, sitting in his garden without the city, in the middle of the month of May, delighted with the warmth of the sun in the spring, he fell into a nap and slept 'till late in the evening; but the night following he was taken with a very bad quinsy, which carried him off, notwithstanding

^o Ibid. § 746.

^p Sect. VI. cap. 1. pag. 325, 326.

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standing the use of the most efficacious remedies to no purpose.

Driness of the fauces, &c.] They who travel through dry, open, and sandy countries, during the summer heats, do know this by experience, namely, that the whole mouth and fauces are so dry, that the swallowing is not only rendered painful, but often quite impracticable, 'till these parts are again moistened by taking drink. For the ultimate extremities of the exhaling arteries are quite dried and shrunk up. And, if the same cause continues to act for a long time, they become altogether impervious. But, when the excretory mouths of these vessels are obstructed, the vessels themselves are dilated by the vital humours urging behind, and, being once dilated, they admit the grosser particles of the blood, whence an inflammation is produced which is easily propagated through the adjacent parts, as the vessels turgid and distended with impervious humours compress those which are next adjacent. These disorders are still more increased, when by the sultry heat of the air the most fluid parts of the blood are dissipated, whence the cohesion is increased betwixt the other parts, which produces that inflammatory viscosity or tenacity in the blood. But since, from what has been said, at §. 100, concerning the effects of an increased circulatory motion, as also, from what has been said concerning the effects of fevers in the comment to §. 587, it appears that by violent fevers the most fluid parts of the blood are dissipated, and the rest inspissated and concreted; the reason is evident enough why a quinsy sometimes is produced in inflammatory and other acute fevers; in which it is commonly a sign of the worst import, as

we said before upon another occasion in the comment to §. 741.

S E C T. DCCC.

WHEN a quinsy is produced from these causes (§. 799.) it creates various and often dreadful symptoms, according to the diversity of the parts which it occupies.

When there is an inflammatory quinsy, it occupies one or more of the parts before enumerated at §. 788, more especially the larynx, pharynx, os hyoides, and the muscles of those parts, together with the upper part of the windpipe. For the other parts mentioned at the section before cited seldom produce an acute quinsy, although they may be inflamed, but rather a more slow or sluggish kind of quinsy, as is evident enough from the situation of the glands, and what has been said before of them. But since the prognosis is various, and a different method of cure is to be followed, according as the inflammatory tumor invades these or those parts, it is therefore apparently necessary for the Physician to be able to distinguish betwixt them. This he may do either by inspection when the inflamed parts lie open to the eye, as when the tonsils, uvula, tongue, &c. are thus affected; or else by the observing the injured functions, which the parts now affected were used to perform in health; but, to do this methodically, those symptoms should be considered apart which usually attend an inflammation either of the windpipe, larynx, pharynx, &c. and then we shall see what will be the consequences, if several of these parts are affected together at the same time.

S E C T.

S E C T. DCCCI.

IF the windpipe only is inflamed in the muscular membrane, which lines it internally, without injuring other parts, there then follows a tumor or a swelling therein, with heat, pain, and an acute ardent fever, but without any signs externally; the voice becomes shrill, squeaking, and wheezing, or whispering; inspiration is attended with an acute pain; the respiration is small, frequent, performed with great labour, and with an erect or raised posture of body; hence the circulation of the blood becomes difficult through the lungs, the pulse wavers or trembles very swiftly and in a surprising manner, great anguish or oppression attends, and death soon follows. And this is one of those kinds of quinsies which are the most fatal, and which afford no external signs: but the nearer the disorder is seated to the glottis and epiglottis, so much the more fatal is it.

Under the present section, we come to treat of that kind of inflammatory quinsy wherein the windpipe only is affected in it's internal membrane, without injuring the other parts subservient to respiration and deglutition. But we know from anatomy and physiology, that the windpipe consists of circular cartilaginous segments with a deficiency in their posterior part, where the cartilage wanting is supplied by a strong membrane, the segments being connected one to another by

strong muscular ligaments. It also appears from thence, that the whole internal surface of the windpipe is lined with a smooth and lubricated membrane, that the air may freely enter and return through this continually open tube. When therefore this membrane is inflamed, the effects common to every inflammation ensue, to wit, tumor, heat, pain, and fever (concerning which see §. 382.); but besides the acute fever there are no external signs attend, as readily appears from what has been said before. An acute pain is indeed perceived by the patient, but they cannot so distinctly point out the painful part, because frequently the inflammation is extended for a considerable length through the internal membrane of the windpipe. The principal signs therefore of such a quinsy are derived from the injured functions of the part itself affected. But the principal use of the windpipe is freely to transmit the air to be inspired and expired for the performance of respiration and formation of the voice. When therefore the cavity of the windpipe is straitened or diminished by an inflammatory tumor there seated, the air cannot conveniently pass into nor out from the lungs, as it used to do in health. Hence the voice becomes shorter, and the air expelled from the lungs passes through the diminished capacity of this tube with a wheezing noise. But as this membrane being inflamed becomes drier, while the larger vessels distended with impervious blood compress the adjacent smaller exhaling vessels, the voice becomes squeaking, as we demonstrated before upon another occasion in the comment to §. 609. No. 2. and 739. But since, the thorax being dilated at the time of inspiration, the air entering the lungs distends it's vesicles, and at the same time elongates
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the windpipe together with it's several branches, called the bronchia; thence this inflamed membrane is stretched, and thus an acute pain is produced in the act of inspiration. But expiration is likewise impeded, as the air cannot pass from the lungs but in a less quantity through the windpipe now straitened by an inflammatory tumor, whence it is obliged to pass with greater celerity. Hence the reason is evident, why in this disease the respiration is small and frequent, and performed with great labour, and the neck raised or erected. This is that respiration which Hippocrates calls high and conspicuous, and esteems one of the worst signs in diseases, as we said before upon another occasion at §. 734.

But as in man after birth the blood is obliged to pass from the right to the left ventricle of the heart, through the lungs, by the narrow branches of the pulmonary artery through the veins; in order for the blood to pass thus freely, it is necessary for the lungs to be dilated by the inspired air. Hence therefore when the dilatation of the lungs is impeded in this kind of quinsy, the circulation of the blood through them will be difficult, whence the lungs will begin to be distended with blood from the right ventricle of the heart, and thence a less quantity of blood will be derived into the left ventricle, which consequently cannot propel a due quantity of blood into the aorta sufficient to dilate the arteries: hence the pulse will waver or tremble swiftly in a wonderful manner, and, from the free passage of the blood being obstructed through the extremities of the pulmonary artery, great anguish or oppression will ensue (see §. 631.), and at length the lungs being stuffed up with impervious blood, the circulation will be suppressed, and death soon be

brought on. Even Galen ^a has already well observed, that any patient who is suffocated with a violent quinsy, has a small and rare pulse, but that when they are about to expire the pulse becomes quick and unequal. Hippocrates ^r also seems to have remarked the like kind of quinsy, which he would have to arise from a hot and nitrous defluxion ulcerating the windpipe. For in this disease he says, *Orthopnœa oboritur, siccitasque multa, & quæ sub conspectum cadunt, gracilia comperiuntur. Posteriores quoque cervicis tendines contenduntur, ac tanquam in tetano intendi videntur. Vox quoque abrupta est, & spiritus parvus, spiritusque retractio densa & violenta oboritur. His arteria ulceratur, pulmo incenditur, neque externum aerem introducere queunt*: ‘ There arises
‘ an orthopnœa with a great dryness, and the
‘ parts within view are slender or without swelling. Likewise the posterior tendons of the
‘ neck are contracted, and seem to be stretched as in a tetanus. The voice likewise is
‘ disturbed, and the respiration is small, and
‘ there arises a frequent and violent drawing in of
‘ the breath. Hence the windpipe becomes ulcerated, the lungs are burnt up, and cannot take in
‘ the external air.’ For it is evident from this description, that the windpipe was affected, and that no inflammatory tumor appeared in the fauces. For as Galen ^s well observes, in his comment to this text, the parts in sight are termed slender, not from their having lost any thing of their natural bulk, but only because there is none of that preternatural kind of tumor observable in them,

^a De Pulsibus ad Tyrones, cap. ultimo, Charter. Tom. VIII. pag. 13.

^r De Victu acutor. Charter. Tom. XI.

pag. 137.

^s Ibidem.

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them, which commonly attends in the other kinds of quinsies.

But that this is a most fatal quinsy is apparent enough from what has been said before, since there is so much danger lest the increase of the swelling should suddenly suffocate the patient; and that is so much sooner and more fatal, as the disorder is seated nearer the upper part of the windpipe; for there, especially towards the glottis, lies the greatest narrowness of this tube, whence it may be easily altogether stopped up, even by a slight tumor. It is therefore with the greatest justness, that Hippocrates^t says, *Anginæ gravissimæ quidem sunt, & celerrimè interimunt, quæcunque neque in faucibus, neque in cervice quidquam conspicuum faciunt, plurimum vero dolorem exhibent & orthopnoeam. Hæ nempe & eodem die, & secundo & tertio & quarto strangulant*: ‘That those quinsies are the most severe, and soonest kill the patient, in which there is neither a tumor of the fauces nor of the neck visible, but are attended with great pain and an orthopnoea. For these suffocate on the same day, as well as on the second, third, and fourth.’ Even Celsus^u seems to condemn such a quinsy as absolutely fatal, when he says, *Neque is servari potest, qui sine ullo tumore febricitans strangulatur*: ‘Nor can the patient be recovered, who having a fever is suffocated without a tumor or swelling of the parts.’

^t In Prognosticis, Charter. Tom. VIII. pag. 673. Coac. Prænot. No. 363. ibid. pag. 872. & No. 376. pag. 873.

^u Lib. II. cap. 6. pag. 55.

S E C T. DCCCII.

IF the larynx especially has an acute inflammation, and the disorder takes up it's seat in the white muscle of the glottis, as well as in those fleshy fibres which serve to shut it, there arises the most dreadful quinsy, which suddenly strangles the patient. The signs here are the same as before (§. 801.) a great pain attends the elevation of the larynx in swallowing, and the pain increases in speaking or calling out; the voice is very sharp and squeaking; and death very speedily ensues, with the greatest anguish or oppression. This is the worst of all quinsies, without any external signs.

The larynx is the upper part of the windpipe, consisting of the crycoide, thyroide, arytenoide cartilages with the epiglottis, and annexed ligaments and muscles, the rima or aperture of which opening in the fauces behind the tongue is the only way through which the air is admitted into and discharged from the lungs. These parts likewise serve to form the speech and various modulations of the voice, as the opening is more contracted or dilated by the muscles of the glottis, agreeable to the manner in which we explained it in our theoretical lectures. If therefore the internal membrane lining the cavity of the larynx, or the muscles serving to shut the rima of the glottis, are inflamed, it is evident enough in how dangerous a situation the patient is, since suffocation is threatened even from a slight swelling
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here produced. It was said in the preceding aphorism, that a quinsy arising from an inflammation in the windpipe was so much the more dangerous, as it was seated nearer to the glottis and epiglottis; how much more so must it be, when seated about the rima of the glottis itself? The signs here are the same as in the preceding kind of the inflammatory quinsy, since in this the free passage of the air through the pulmonary tube is impeded, and without the appearance of any signs externally; because when the mouth is opened and the tongue depressed, the extremity only of the epiglottis appears to view; but the rima, or opening of the glottis itself, can seldom or never be seen.

But there are two signs by which this kind of quinsy may be distinguished from the preceding, namely, the sharp and squeaking voice, and the severe pain, when the larynx is elevated in swallowing. For we know that the voice becomes more acute, or grave, only from varying the magnitude of the rima of the glottis, and the different celerity of the air blowed out; and that this is imitated in musical instruments which are blown by the mouth. Since therefore the rima of the glottis is diminished from a swelling of the internal membrane of the larynx, or an inflammation of the muscles serving to shut the glottis, the voice must therefore of necessity become very sharp and disagreeable by a hoarse squeaking, like what we observe in singers, when they endeavour to raise their voice too high, to form the most acute tones: for the redness and turgescence, or even sometimes livid colour of the face, are sufficient testimonies that there is danger of suffocation from too great a diminution of the aperture of the glottis. Moreover, as such patients

patients uſe all their endeavours in reſpiration, to avoid the approaching ſuffocation, the air muſt be conſequently drove through the rima of the glottis with ſo much greater celerity, as that aperture is more contracted or diminished, whence again the ſharpneſs of the voice will be increaſed. From hence likewiſe it is evident, why the pain is ſo much increaſed in ſpeaking and calling out, namely, becauſe the air is then drove with a greater impetus and velocity through the ſtraitened and inflamed parts.

But, at the time when any thing to be ſwallowed is thruſt into the pharynx, the larynx is drawn up with greater celerity, while at the ſame time the tongue now urging backward againſt the fauces turns back the epiglottis, and by theſe two actions concurring together prevents any part of what is to be ſwallowed from ſlipping through the rima of the glottis. It is therefore no wonder that the patient ſhould perceive the moſt acute pains in ſwallowing, ſince the inflamed larynx is ſo ſwiftly drawn upward. But although, when the larynx is drawn up, the windpipe adhering to it muſt neceſſarily follow, whence the pain muſt be increaſed in ſwallowing when that is inflamed; yet, in ſwallowing, the larynx ſeems to move much more than the windpipe itſelf; as is evident if the fingers be applied to the forepart of the neck in that action, where the larynx and windpipe may be plainly felt.

It is then evident, that theſe two kinds of quinſies have ſeveral ſigns in common to each other, and, if the inflammation is ſeated in the upper part of the windpipe, it may be difficult to make the diſtinction. But the principal difference is pointed out by the extreme ſharpneſs and ſqueaking of the voice when the larynx is inflamed.

flamed. For, although the voice is rendered more acute when the windpipe is inflamed, from a diminution of it's cavity, yet, as the air expelled from the lungs is retarded by this obstacle, it passes out with less celerity through the rima of the glottis, and therefore the sound will not be so acute. However, if the Physician should happen to be deceived in these two kinds of the inflammatory quinsy, there is no great danger to be feared from thence, since they are both very fatal, and require the same method of cure; as we shall hereafter make appear at § 809. But since in these two kinds of the quinsy, suffocation being at hand, the unfortunate patient has his face inflated, his eyes protuberant and suffused with blood, and throws out his tongue like a dog panting after the most rapid course: therefore this kind of the disorder is more especially by authors called cynanche beyond the rest, as we observed before at §. 703.

Hence the reason is evident, why Hippocrates^x says (as we observed before upon another occasion at §. 741.) *In febris derepente suffocari, neque deglutire posse, absque tumore, malum est*: ‘ That it
 ‘ is a bad sign for the patient to be taken sudden-
 ‘ ly with the symptoms of suffocation in fevers,
 ‘ without being able to swallow, and without a
 ‘ swelling of the parts.’

These are the quinsies which carry off people very suddenly; and which, Sydenham^y observes, sometimes prove fatal in a few hours, though the cause of the patient's sudden death in this disorder is not so much ascribed by him to the affected parts, as from the copious deposition of the febrile

^x In Coacis Prænot. No. 278. Charter. Tom. VIII. pag. 867.

^y Sect. VI. cap. 7. pag. 357.

febrile matter upon them, and from the most efficacious remedies not being used soon enough. Yet Tulpus^z laments that, a sea-faring man of a full habit being seized with such a quinsy at an unseasonable hour of the night, the best remedies of all kinds were tried by him to no purpose. For says he, *Nihil enim non molitum: sed urgentior fuit necessitas, & vehementior ab incluso spiritu strangulatus, quam ut juverint ipsum vel sanguis mature ex utroque brachio detractus, vel incisa ranula; vel cucurbitulae, gargarisationes, clysteres, cataplasmata, aliaque satis celeriter adhibita:* ‘ Nothing was left untried; but the
 ‘ symptoms were more urgent, and the suffoca-
 ‘ cation more violent from the confined breath,
 ‘ than to allow the patient any relief either from
 ‘ a timely bleeding in each arm, or from open-
 ‘ ing the vein under the tongue; or even from
 ‘ cupping-glasses, gargles, clysters, cataplasms,
 ‘ and other remedies however speedily applied.’ A like case came under my own observation in a man fifty years old, ill of a fever, which, though not intense, was attended with an obstruction of the swallowing, and a most acute squeaking voice. The celebrated author of these aphorisms knew a man seized with the like disorder in the midst of a feast; and while the company were thinking that the unhappy patient feigned such a sharp voice for the sake of mirth, he was suffocated before any remedy could be applied. But in the mean time these most fatal quinsies do but seldom occur; whereas those are much more frequently observed concerning which we are to treat in the following aphorisms.

^z. Observat. Medicar. Lib. I. cap. 51. pag. 96.

S E C T. DCCCIII.

IF the muscles only which serve to draw up the os hyoides and larynx are violently inflamed, there are the following apparent signs; the breathing is free enough, but the swallowing is most extremely painful in the exercise of the first part of that function; there are also the signs of inflammation in general; and, moreover, the signs in these muscles appear evidently enough to the examination of the Physician.

We have seen before, that the larynx is drawn up in the act of deglutition; but likewise the os hyoides, together with the parts connected to it, is drawn up more especially by the styloceratohyoidei muscles. When therefore these muscles, or others, destined to the performance of this action, ^a are inflamed, it is evident enough, that the most acute pain must follow. Such quinsies are much more frequent than those before enumerated (§. 801, 802.) in which the patients, if they do but attempt to swallow, are convulsed throughout the whole body from the severity of the pain. But, as these muscles are deeply situated, upon inspecting the fauces, there is often no tumor appears; namely, when the disorder is seated in those muscles only. Nor is there any tumor conspicuous externally in the neck, for the same reason; but generally this disorder is seated only on one side: at least, I have observed it so, in those who have been under my care in this quinsy, in which sometimes the
patient

^a Vide de his Boërhaave Institut. Medic. §. 70, 71.

patient has been able to point out the course and situation of the painful and inflamed muscle, at least in the beginning of the disease; for afterwards the inflammation frequently spreads itself into other parts. But this kind of quinsy is easily distinguished from the preceding, because the respiration continues free enough, and the voice is not so sharp or squeaking. Although this kind of quinsy is not so fatal as those preceding, yet it is not without danger, as well, because it renders deglutition impracticable, as from the disease frequently moving by a dangerous metastasis to the lungs, concerning which case we shall speak hereafter. At least in those whom I have seen afflicted with this kind of quinsy, I have observed generally, that the pain is gone off without any good signs, and the swallowing has become very free, but then an orthopnoea and disagreeable snoring in the breast, and death itself, have ensued. But, if such patients recovered, it was not without the greatest difficulty, and after hard struggling with the most dangerous symptoms. This kind of quinsy attended the person we mentioned § 799, who pointed out the course of the pain on the left side of the neck, proceeding from the styloide process to the larynx; but there was no apparent tumor, either in the neck or fauces. Although in this case there was no fever attended for the first twelve hours, yet a copious bleeding was immediately ordered to be repeated three times in this patient, though sixty years of age; clysters were injected every three hours, cupping-glasses were applied betwixt the shoulders to make a revulsion, the whole neck was wrapped up in the most emollient cataplasms, and a semicupium was frequently used of the most emollient herbs boiled in water and milk,

milk, and the mouth was frequently washed with liquors of the like kind, but all were to no purpose. But, about the beginning of the fourth day, the patient was rejoiced that his swallowing was now become very free; and he eagerly took the drink which was offered him. But then a pain attended in the breast with a snoring, the fever increased, and the same day about five in the afternoon he expired. I have seen other cases of the same kind, and some of them proved fatal in still a less time; and thus I have been taught, that this kind of quinsy also is very doubtful, though the respiration continues very free; nor is it without reason, that Hippocrates^b, in his Coan Prognostics, has the following words: *In angina omnia pernicioſa ſunt, quae non manifestum dolorem faciunt*: “The consequences are fatal in every quinsy, which does not produce a manifest pain or inflammation.” At the same time it is also evident, that these quinsies are not fatal from their injuring the deglutition (for the interruption of that function may be supported much longer, as we shall demonstrate hereafter;) but they then become fatal when there is a bad translation of the disease upon the lungs, as frequently happens in these quinsies.

S E C T. DCCCIV.

BUT, when the pharynx only is invaded by this disease, the particular signs are apparent upon inspecting the fauces, the respiration continues easy enough, but the swallowing is painful and impracticable, the aliments about to be swallowed return through

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^b No. 376. Charter. Tom. VIII. pag. 873.

the nose, or else being drove into the windpipe excite a violent cough; hence the patient abstains from the food and drink, which ought to be taken in, whence a drying up and increase of the acrimony in all the humours of the body, the fever is here not so intense, and the disorder continues longer before it grows fatal.

We have now seen in the three preceding sections, what symptoms attend an inflammatory quinsy when it is seated in the windpipe, or it's upper part called the larynx, or else in the muscles which draw up the larynx in deglutition. It now follows, that we consider the accidents which happen when the same disorder is seated in the tube which conveys the swallowed aliments into the stomach; and, lastly, we shall see what happens when the tonsils, uvula, or pendulous covering of the palate with their muscles are inflamed; all which parts the food swallowed must touch, before it can pass into the pharynx and œsophagus. But, in the present Aphorism, we are to treat of such things as are observed when the pharynx or œsophagus continued to it are inflamed.

But we call the fauces, or pharynx, that space which appears behind the pendulous covering of the palate, uvula, and tonsils, terminated above by the broad openings of the nostrils behind the velum pendulum of the palate, backward by the vertebræ of the neck and the muscles which cover them: below it is continued to the œsophagus, before which is placed the larynx. But forward the cavity of the pharynx is open, only in such a manner, that the tonsils, velum pendulum,

dulum, and uvula, do in part cover this aperture, but the rest of the space which is not occupied by these parts opens into the cavity of the mouth. This whole space is invested by a membrane, which is a continuation of the coat lining the nostrils and palate. But the pharynx receives various muscular fibres from the parts contiguous to it, and to which fibres a particular name is given, according to the part from whence they arise, as the glossopharyngæi, thyropharyngæ, cricopharyngæi, stylopharyngæi, &c. which dilate this cavity of the pharynx, and serve various purposes in the act of deglutition, as is demonstrated in our lectures on the theory of physic, at §. 70 to 73^c. The pharynx may be therefore considered as the broader part of a funnel opening before, and continued to the œsophagus, above which it may be therefore considered as the broader part of a funnel opening before, and continued to the œsophagus; but, where the pharynx terminates in a round equal tube, it is then no longer termed pharynx, but the œsophagus.

When therefore the pharynx is inflamed, upon opening the mouth, the back part of it which covers the vertebræ of the neck may be viewed, and the disease thereby discovered. But the same may be likewise known from the injured functions. For the use of the pharynx is to admit the food and drink into it's cavity, and afterwards to determine them through the tube of the œsophagus into the stomach. When therefore the pharynx only is inflamed, there appears no disorder in the organs of respiration, but the patient breathes freely, only the swallowing is painful, and, even sometimes, it is quite impracticable,

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when

^c Vide de his H. Boer. Institut. Medic. §. 70, 71, 72.

when the inflamed parts are irritated by the passage of what is to be swallowed, and by the action of the muscles adhering to them; and from hence whatever is forced into the fauces is thrown back again without being able to enter into the œsophagus. But from the pharynx there is an open passage into the nostrils, as well as into the cavity of the mouth; whence frequently in this kind of quinsy, when the matters to be swallowed are arrived at the fauces, they are frequently returned through the nostrils by a convulsion of these parts from the severity of the pain: and, as the rima of the larynx opens into this space, some part of what is to be swallowed will unavoidably slip into it by such a sudden expulsion; from whence again will follow a most violent and suffocating cough, insomuch that the patient, having once experienced these troublesome symptoms, will afterwards hardly dare to attempt the act of deglutition. From hence will follow an omission of the food and drink which ought to be swallowed, and consequently, from the defects of nutrition and scarceness of the fluids, the body will be wasted and dried up. But since it was demonstrated at §. 80, that our healthy humours, by abstinence from food and drink for the space of twenty-four hours, acquire the nature of an incipient putrefaction; it is therefore evident that the consequences of such a quinsy will be an acrimony of all the humours in the body; whence it is likewise evident, that great difficulty attends the cure of it: for that method of curing the inflammation is here to be chiefly attempted which is made by resolution or dispersion; since the other ways of terminating an inflammation in these parts are so very dangerous, as will be made evident hereafter. But to cure an inflammation

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flammation by resolving or dispersing it requires the humours to be mild or without acrimony, and to be supplied with a diluent vehicle; (see §. 386.) both which are very difficult to be obtained in this case, where the passage of what is to be swallowed in the stomach is impeded.

But generally the fever is not observed so violent in this kind of quinsy, as in those which have been described in the three preceding sections; and, as the respiration here continues free, there is not so much danger of sudden death, since liquors may be conveyed into the body by baths, fomentations, gargles, clysters, &c. as we shall declare hereafter in the cure; and thus too great dryness may be prevented, and the want of nourishment in some measure supplied. Hence Hippocrates ^d, having condemned those quinsies as most fatal in which there is no appearance of the disorder to be observed either in the fauces or neck, soon after subjoins: *Quaecunque vero in cæteris quidem similiter dolorem exhibent, tument vero, & in faucibus rubores excitant, admodum quidem exitiales, prioribus tamen diuturniores sunt, si ingens rubor fuerit.* “ But in all other
“ kinds of quinsies which have the like pain, but
“ together with a swelling and redness in the
“ fauces, they are indeed very fatal if the red-
“ ness appears great, but are of longer continu-
“ ance than the former.”

But when the inflammation is not seated in the pharynx, but in the œsophagus continued from it, even then all the like disorders follow. But the affected part does not appear to view, but the patient knows well enough this kind of quinsy from the great pain which ensues, when the aliments swallowed have reached so far. But,
H 3 when

^d In Prognosticis Tom. VIII. p. 673.

when the upper part of the œsophagus is inflamed, the pain is felt not so much at the time of swallowing when the matter is conveyed from the pharynx into the œsophagus, as when the larynx is drawn up in the first act of deglutition, as is evident enough from the known situation of these parts; but that the œsophagus being painful and inflamed is so irritated by what is swallowed as at length to drive it back again through the nostrils, has been formerly observed by Galen^e where he treats of the disorders of this part; and he takes notice likewise that the same symptoms attend when the œsophagus is straitened by adjacent tumors, as also, *sive inflammatione affectus ipse, propria angustia, non à vicinis partibus acquisita, torqueatur.* “ When
 “ the tube itself being invaded with an inflammation does not derive it’s stricture from the
 “ adjacent parts.” But he more particularly gives us^f the following signs of this disorder. *Gravissimus dolor inter deglutiendum infestat, accedente difficili transitu; præsertim si supinus jacens æger quidpiam deglutire conetur.* “ A most violent pain attends in swallowing, accompanied
 “ with a difficult passage, more especially if the
 “ patient endeavours to swallow any thing lying
 “ down upon his back.” But he observes in the same place that thirst and great heat attend, and that the fever is not so violent, nor in proportion to the thirst. But since the œsophagus lies upon the vertebræ, throughout it’s whole extent, he adds that all such as have a painful quinsy in this part do likewise perceive a pain in the back.

S E C T.

^e De Locis Affectis Lib. V. cap. 5. Chart. Tom. VII. p. 690.
^f Ibidem p. 691, 692,

S E C T. DCCCV.

BUT if the tonsils, uvula, with the membranous moveable part of the palate, and it's four pterygostaphylini muscles are violently inflamed, then almost the same symptoms ensue as in the former quinsy (§. 804): the respiration here is obstructed and difficultly performed, not at all through the nose, and in a small degree through the diminished fauces; the matter to be swallowed, from the stricture and intense pains, returns through the mouth; there is a continual spitting and copious flux of phlegma to the cavities of the tonsils; there is an acute pain in the internal ear and in the passage leading from it into the fauces; there is a rattling in the ear at the time of swallowing, and frequently a perfect deafness attends. This kind of quinsy is now-a-days very frequent from the venereal disease, and much to be feared.

This kind of quinsy is the most frequent of all, and is proportionably much less dangerous than the preceding, though it is often troublesome enough. When the fauces are inspected by opening the mouth, and depressing the root of the tongue by a spatula, the pendulous moveable palate appears to view with the uvula hanging down in the middle, and, from the basis on each side at the back part of the tongue, arise the two anterior columns, one on each side, forming very narrow arches, in the midst of which the uvula hangs down. Behind the two

anterior columns arise two other posterior columns forming an arch like the former, and terminating in the uvula and almost disappearing above together with the two anterior columns. In the middle space betwixt the anterior and posterior columns are placed the tonsils on each side. If now an inflammation occupies one or more of the parts before described, the deglutition will be impeded, because the free performance of that function requires the pendulous part of the palate to be stretched or expanded every way, so as to prevent any part of what is to be swallowed from passing up through the nostrils. But also the uvula performs various motions by it's proper muscles at the time of swallowing, as is demonstrated in our lectures upon the theory. From all this it is evident, that the act of deglutition must be injured when the parts are inflamed. But the respiration also will be difficult, if these forementioned parts are much swelled, for the air breathed in by the mouth must pass through that space which lies betwixt the root of the tongue, tonsils, velum of the palate and uvula, and therefore, this space being much diminished by the inflamed and swelled parts, the respiration will be incommoded. But, as a production of the membrane lining the nostrils covers the back part of the pendulous palate, therefore an inflammation arising in this last will occasion likewise a swelling in the membrane of the nostrils, whence the opening of the nostrils into the fauces will be greatly diminished, and even sometimes may be totally stopped up, as we oftentimes observe in those afflicted with catarrhs. But since the opening of the fauces is very rarely thus shut up by a swelling of these parts, so as intirely to intercept the passage of the air; therefore such patients

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tients may still continue their respiration, though with trouble or difficulty. Hence it is also evident why this kind of quinsy is less dangerous, since it usually injures the deglutition much more than the respiration; and, as all these parts may be viewed when the mouth is open, therefore physicians have determined unanimously, that those quinsies are the least dangerous, in which a swelling and a redness manifestly appear in the fauces.

But none of the forementioned parts are oftener affected than the tonsils; and no parts are observed to swell more when they are inflamed. But, when the tonsils are swelled, they are visible in the fauces, and frequently they likewise occasion a manifest tumor externally in the neck under the angle of the lower jaw. And this seems to have been the reason, why Hippocrates condemns those quinsies as most pernicious (as we said before,) in which there is nothing amiss to be observed by inspection, either in the fauces or neck; for most frequently, even in the least dangerous kind of this quinsy, there is a swelling in the tonsils. But since the swelling of the tonsils may thrust the parts outward, and they are found prominent towards the cavity of the mouth, there is less danger lest opening of the adjacent larynx should be obstructed by the swelling of these parts. From hence Hippocrates[§] seems to have pronounced this quinsy to be the least fatal. For, where he describes the several kinds of quinsies, he has the following passage:
Alia angina. Linguae pars posterior inflammatur, claustrumque sub gutture, neque salivam, neque aliud
quid

[§] De Morbis Lib. II. cap. 9. Charter. Tom. VII. pag. 561.

quid deglutire potest, sed, si coactus fuerit, per nares effluet, &c. “ In another quinsy, the back
 “ part of the tongue is inflamed, and, the pas-
 “ sage being shut up under the throat, neither
 “ the saliva nor any thing else can be swallow-
 “ ed; but if it is forced it runs out through
 “ the nose, &c.” He afterwards orders cataplasms
 to be applied to the neck and jaws, made of meal
 boiled with wine and oil, and likewise hot bread
 to be applied in the same manner: *ut plurimum*
enim in claustro sub gutture suppuratio fit; & si
sponte sua ruptum fuerit, sanus evadit; si vero
non rumpatur, ubi digito contigeris, an molle fuerit,
acuto ferramento ad digitum alligato, perforato.
His factis multi convalescunt. Is vero morbus
minimum letalis est: “ because generally a sup-
 “ puration is made in that cell or cavity which
 “ is under the throat; and, if the abscess breaks
 “ spontaneously, the patient recovers; but, if it
 “ does not break, you must perforate it where
 “ it appears softest to the touch of a finger, name-
 “ ly, by fastening a sharp instrument of steel to
 “ the end of the finger. This method being fol-
 “ lowed, many recover. But this kind of quinsy
 “ is the least fatal.” And, in the following
 chapter^h where he treats of disorders of the tonsils,
 he says, *si tonsillae oriantur, sub maxillis ab utraque*
parte tumor fit, qui foras ad contactum durus est,
& tota uvula inflammatur: “ if the tonsils rise
 “ outward or swell, there is a tumor on each side
 “ under the lower jaw, which is hard to the
 “ touch outwardly, and the whole uvula is in-
 “ flamed.” But, after a maturation has been
 promoted by a cataplasm like the former, he adds,
ubi vero tubercula mollia tibi videbuntur, intus con-
tacta, scalpello pertundito. Quaedam autem etiam
sponte

^h Ibid. pag. 562.

sponte sua subsident: “but, when the tubercles
 “appear soft internally to your touch, you must
 “make an opening by the scalpel. But some of
 “these swellings subside of their own accord.”
 From whence it is evident, that both the tonsils
 and uvula are inflamed at the same time, and
 therefore, that the passage being greatly diminished
 through which the air must enter from
 the mouth, yet the patient may be able to support
 the disease ’till there is a perfect suppuration,
 and that even sometimes these tumors may sub-
 side spontaneously. It also seems very probable
 from this passage, that Hippocrates sometimes
 opened tumors of the tonsils externally in the
 neck, when they were perfectly matured; for
 he here says only, that they are to be laid open
 by the scalpel; whereas in the former case, when
 the suppurated tumor was to be opened internally,
 he expressly orders it to be performed by a sharp
 instrument of steel fastened to the finger. But
 then the sense of this passage will be, “that
 “after the tumors seem soft, the finger being
 “introduced into the mouth to press gently upon
 “them to make them project more outward,
 “they may be then opened by a scalpel exter-
 “nally.” For it appears from medical observa-
 tions, that suppurated tonsils sometimes swell ex-
 ternally in the neck, and there break spontaneously,
 or are laid open by the lancet; yet this happens
 more frequently internally, because there the
 parts are continually moistened and kept warm,
 and are not covered with a thick skin.

But it is sufficiently evident, that this kind of
 quinsy is not without danger in some degree, ac-
 cording as the tumor is larger, and as more parts
 are affected at the same time; as, for example,
 if both the tonsils are swelled at the same time,
 the

the passage will be greatly diminished. But frequently the inflammation begins in the tonsils only on one side, and, when that has been relieved by dispersion or suppuration, the disorder then affects the tonsil of the opposite side in the same manner. Sometimes the inflammation is only slight and superficial, as in those quinsies of these parts which arise from colds or catarrhs, and sometimes also the inflammation and tumor are very considerable. But, in the mean time, one ought not to despair in the least, though these parts should be swelled with a very great tumor; for I have very rarely known them to prove fatal, and only in such as have had the inflammation spread to the adjacent larynx, or when the disease has been translated to the lungs, the swallowing being restored to it's freedom, but the breast being at the same time oppressed by the disease; for it appears almost from daily observation, that some people have quinsies of this kind every year, and that they come often to suppuration: even I have known some who have been used to this disorder twice a year, namely in spring and autumn, unless at the turn of the year they made use of bleeding and cooling purges as preventatives.

But the different intensity of the fever attending in these quinsies has a great share in determining the prognosis. For sometimes a slight fever precedes and goes off when these begin to be inflamed; and then these quinsies almost constantly prove slight. But sometimes the fever continues, though the inflammatory matter is deposited upon these parts; and such quinsies are more violent. It was said before at § 593. that a fever terminates in another disease, when the critical matter is deposited into some of the ob-

structed,

stricted, dilated, or ruptured vessels, so as to produce red spots, pustules, an erysipelas, phlegmon, &c. When therefore the fever continues after such a deposition is made, we know, that there is not an entire separation of the critical matter accomplished, and therefore that there is danger lest it should settle upon other adjacent parts of greater consequence, or else greatly increase the present disorder, by adding to that which is already deposited upon the affected parts; or else it denotes that a violent inflammation is seated in these parts, which is then always accompanied with a fever. For a slight inflammation does not excite a fever throughout the whole body, but only in the particular part, as we demonstrated before in the comment to § 371. But Hippocrates¹ seems likewise to have pointed out this, when he says, *Ubi fauces aegrotant, vel tubercula in corpore exoriuntur, excretiones spectare oportet: si namque biliosae sint, corpus simul aegrotat. At si sanorum excretionibus similes extiterint, tutum est corpus nutrire*: “When the fauces are
 “inflamed, or tumors arise in the body, excre-
 “tions ought to be expected; and, if they are
 “bilious, the body is indisposed at the same
 “time. But, if the excretions appear like those
 “in health, it may be safe to nourish the body.” But we proved before at § 673. that the internal heat of the body may be known from the red colour of the urine.

We are now to consider the principal symptoms which occur, when the parts enumerated in the text are violently inflamed. We have already treated of the respiration and deglutition impeded and disordered. But in the present kind of quinsy the copious and continual flux of phlegm to the

¹ Aphor. 15. Sect. II. Charter. Tom. IX. pag. 52.

the cavities of the tonsils with a frequent spitting are the most troublesome symptoms. We know from anatomy, that the pendulous part of the palate and uvula, with the root of the tongue, are full of mucus, cryptæ or cells; and that the tonsils more especially consisting of the mucous membrane folded together afford a great quantity of mucus, by which the food to be swallowed is spread over and lubricated to pass more easily through the pharynx and œsophagus. Since therefore the tonsils being inflamed are frequently distended into such large tumors, these vessels, being dilated and irritated by the inflammatory tumor, press out a greater quantity of mucus. For we observe the same effect to follow when other parts of the body are disordered in the same manner. Thus, those who are afflicted with an ophthalmia or inflammation of the eyes have a constant and plentiful running of the tears; the internal membrane of the nostrils being slightly inflamed in a cold, there is a great quantity of mucus discharged from the nose, &c. But the quantity of this phlegm is increased, because the pain hinders it from being swallowed; and therefore the patient suffers it to continually distil from his mouth held open, or else being accumulated about the fauces, the parts being irritated by the quantity and tenacity of the collected mucus, obliges the patient even against his inclination to attempt to swallow it with the most acute pain. But how severe the pain is with which the patient is sometimes afflicted, when, these parts being inflamed, they are obliged to endeavour to swallow, the celebrated *Monro*^k experienced in himself, who, being afflicted with this kind of quinsy attended

with

^k Medical Essays, Tom. III. p. 343.

Sect. 805. Of an inflammatory Quinsy. III

with many irregular symptoms, confesses, that he could not avoid frequently swallowing the saliva and mucus, though he endeavoured against it with all his power; and that so great a pain followed every endeavour to swallow, that he shook the whole bed with a violent trembling of body, and a copious sweat appeared upon his skin. From hence, though patient enough in bearing pain, he was obliged to rise out of bed, and inclined his head forward with his mouth open to discharge the saliva, to avoid the intolerable torture which attended the swallowing of it. This perpetual and copious discharge of phlegm in quinsies of this kind seems to have inclined the ancient physicians to make phlegm the material cause of quinsies which they supposed to flow from the head. Thus Hippocrates¹ says, *Oritur autem angina, quum pituita, in capite agitata, deorsum confertim fluxerit, & in maxillis ac circa cervicem constiterit. Hic salivam deglutire non potest; violenter autem respirat ac stertit, ac interdum etiam cum febris detinet:* “But a quinsy arises when
“the phlegm agitated in the head flows plenti-
“fully downward, and shews itself in the jaws,
“and about the fauces, or neck. In this case, the
“patient cannot swallow his saliva, but breathes
“very forcibly, snores, and is sometimes also
“held with a fever.” And soon after he adds, as follows, *Tonsillae autem, & partes sub lingua sitae, gingivae, & lingua, & quaecunque hujusmodi hoc loco consistunt, illae omnes partes a pituita aegrotant. Pituita autem ex capite descendit, &c.*
“but the tonsils and parts seated under the
“tongue, with the gums and tongue itself, with
“all the circumjacent parts, are each of them in-
“disposed

¹ De Morbis Lib. II. cap. 3. Charter. Tom. VII. pag. 553.

“ disposed by phlegm. But the phlegm descends
 “ from the head, &c.” From what has been
 hitherto said, it appears, that this phlegm is rather
 the effect than the cause of the disease.

Another symptom, which usually attends this
 kind of quinsy, is an acute pain in the internal
 ear, and in the passage which leads from thence
 into the fauces; namely, in that canal which is
 called the Eustachian tube, being partly bony,
 partly cartilaginous, and in part membranous, and
 opening with it's bony extremity into the cavity of
 the tympanum in the internal ear; but it's other
 and broader extremity opens at the inner side of
 the internal wing of the pterygoide process of
 the os sphænoides, at the side of the posterior
 opening of the nostril on the same side above the
 velum of the palate. Hence, when the mouth
 is open, and the person endeavours forcibly to
 blow out the air, not through the nostrils, but
 through the mouth, only held wide open, the
 opening of the aperture of the Eustachian tube
 appears to view, while the posterior foramina of
 the nostrils are shut up by the elevation and
 retraction of the velum of the palate at the
 same time. Even a syringe has been contrived,
 by which having a crooked pipe, an injection
 may be thrown into the orifice of the Eusta-
 chian^m tube. But the internal surface of these
 tubes is invested with a membrane like that which
 lines the intended nostrils, of which it seems to be
 a continuation. When therefore the pendulous
 covering of the palate and uvula are inflamed,
 since they are so nearly seated to the openings of
 these tubes, the reason is very evident why the
 disorder extends itself to these parts, and an
 acute pain is perceived in the internal ear, and
 throughout

^m Academ. des Sciences l'An. 1724. hist. pag. 33.

throughout the whole tract of the Eustachian tube. But since the muscles of the malleus, (by means of which the membrane of the tympanum is drawn inward so as to diminish it's cavity) are inserted into these tubes, which they dilate at the same time, that the compressed air in the cavity of the tympanum may this way freely escape, the reason is evident, why a rattling is perceived in the internal ear when these inflamed parts are moved in the act of deglutition. But when the internal membrane of these tubes is so inflamed and swelled as to fill up their cavity, or when the adjacent tumor has so compressed or closed up the orifices of the tubes as to deny a free passage to the air, the patient frequently becomes perfectly deaf. Valsalva^a observed a deafness arising from this cause in a Senator who was afflicted with a polypus in the nose. For, as the polypus grew larger and extended itself to the uvula, it gradually more compressed the orifices of the tubes, whence the patient's hearing was diminished every day, and at length he became perfectly deaf. But the truth of this appeared more evidently in a man of common rank, who had these parts so much corroded by an ulcer seated on the left side of the pendulous palate above the uvula, that the cavity of the ulcer communicated with the extreme orifice of the left Eustachian tube. For, whenever he introduced a tent into the cavity of the ulcer, it stopped up the opening of the tube, and this always made him deaf in his left ear, which deafness continued as long as the tent remained in the ulcer, but upon removing it he immediately recovered his former hearing.

But deafness arising from this cause in an in-
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^a De Aure humana cap. 5. §. 11. p. 90.

flammatory quinsy is removed by allaying the inflammation; at least generally it is thus cured. I knew a patient to continue deaf for several days in a quinsy of this kind, which came to suppuration; but, when the abscess broke, the hearing was again restored.

But, when these parts are corroded by an ulcer in the venereal disease, the orifices of the Eustachian tubes sometimes happen to be excoriated and afterwards grow together, whence an incurable deafness is produced. Sometimes also these ulcers spreading slowly extend through the whole length of the Eustachian tube, and perfectly destroy the internal ear, while at the same time a foul ichor runs from the external ear in those unfortunate patients who have their fauces ulcerated by this dreadful disease, concerning which we shall say more hereafter in the history of the lues venerea. It is sufficient here to observe, that such a deafness is frequently produced from this disease, and is greatly to be feared, since it is hardly ever curable, as is sufficiently evident from what has been said before.

S E C T. DCCCVI.

BUT if all these inflammatory kinds or the quinsy (§. 801. to 806.) afflict the patient together at the same time by their various concurrence, it is easy to conclude, that the disease will be so much the more severe as more of them conspire together into one and that then also the symptoms will turn out more numerous and severe.

From

From what has been said in the sections cited in the present Aphorism, it is evident that inflammatory quinsies may be thus commodiously distinguished into five kinds according to the different parts affected. We there likewise enumerated the symptoms which attend each kind, from the observation of which is derived the manifest diagnosis, or distinct knowledge of these quinsies. From thence likewise may be deduced the prognosis, which informs us, that those quinsies are the most dangerous which impede respiration; but that those which injure the swallowing only, while the respiration continues free, are less dangerous. But, among those quinsies which impede the respiration, the worst appears to be that seated about the larynx; and the most dangerous of those that injure deglutition only is judged to be that which occasions the most acute pain in the first act of deglutition, without any apparent swelling or redness in the fauces, as we proved before at § 803. And it likewise appeared in the prognosis, that it might be taken for a general rule, that those inflammatory quinsies are of all the most fatal, which have no manifest tumor, or redness to be perceived; but that the other quinsies, though troublesome enough, are frequently attended with no great danger.

But, although these quinsies before described most frequently happen alone, yet sometimes the inflammation is spread through several parts in the very beginning of the disease; and sometimes the inflammation raised about these parts is observed to spread greatly, so as to give birth to a great many maladies concurring together at the same time. But it is evident enough, that the disease will be so much the more difficult to cure, and

most fatal in it's events as more of these kinds of quinsies conspire together; and that therefore the consequent symptoms will be more numerous and severe. But we shall in the following Aphorism enumerate the chief symptoms observed in such an unfortunate complication of so many disorders, before death puts a period to these sufferings which are certainly greater than all human patience can support.

S E C T. DCCCVII.

FOR, the return of the blood being obstructed in the external jugulars from a compressure of them, there follows a swelling of the face, tongue, lips, and fauces; the tongue is thrust out, distorted, and inflamed; the eyes look red, swelled, and frightfully portuberant; the brain is for the same reason compressed or suffocated; hence the sight, hearing, and touch, are rendered dull, the patient becomes delirious, holds his mouth open, snores, and is unable to lie down for fear of suffocation; there is often likewise a redness, swelling, pain, and pulsation conspicuous in the throat, neck, and breast, from whence the jugular veins, with those of the forehead and under the tongue, become distended into varices.

When the respiration is obstructed in an inflammatory quinsy, the lungs cannot freely expand themselves, whence the right ventricle of the heart cannot readily expel it's contained blood through the narrow extremities of the pulmonary artery into the left ventricle; and therefore

therefore the blood will begin to be accumulated in the lungs and right ventricle of the heart. The right auricle and venous sinus will be therefore unable to empty themselves, and therefore the blood will be likewise accumulated in these cavities. Hence the venal blood returning from the whole body through the upper and lower vena cava cannot enter into these cavities already filled; and from hence therefore the veins will be distended. But all the venal blood from the lips, tongue, and face, returns to the heart chiefly by the external jugular, while the blood from the interior parts of the head moves through the internal jugular vein. When therefore the blood cannot pass freely through the jugular veins from the respiration being obstructed, all the blood-vessels belonging to the external as well as to the internal parts will be more and more distended, since the arteries continue to send forward the blood, while in the mean time it cannot return by the veins. Hence the fauces, lips, tongue, &c. will be swelled, &c. and the eyes suffused with blood will look red and protuberate in a frightful manner; the tongue swelling can be no longer contained in the mouth, but will be thrust out, distorted, and appear of an ugly livid colour, froth and spittle being discharged from the mouth at the same time. But, since from the same cause the blood-vessels distributed through the encephalon are distended, the soft pulp of the encephalon will be compressed, whence the sight, hearing, and touch, will be rendered dull, all the functions of the brain will be disturbed, and at length entirely abolished; but a snoring or rattling attends when the viscid froth begins to fill the whole mouth, fauces, and lungs, and

the blood-vessels of the lungs being distended at the same time, the cavities of it's air-vessels are diminished. Hence the unfortunate patient suffers all those disorders which happen to such as are strangled with a halter; only in this disorder they are much more unhappy, as they are obliged to suffer these bad effects slowly and gradually advancing. But, when the respiration is not so much impeded, the inflamed and swelled parts compressing the adjacent external jugular veins will then indeed permit the blood to return freely as yet from the encephalon by the internal jugulars; though in the mean time the face, lips, tongue, and eyes appear very turgid. But, when the compression of the external jugular veins has continued some time, all the blood-vessels being filled, which are distributed through the external parts of the head, will occasion all the blood which is drove from the heart into the adjacent carotids to pass through the internal branches only of the carotid arteries, whence all the functions of the brain will be disturbed by too great a repletion. All these symptoms we see follow successively even in the most healthy person, if the collar or neckband, being too tight, compresses the external jugular veins. But since there are many veins of the throat, neck, and upper parts of the breast, distributed through the muscles as well as the integuments of those parts, which discharge their contents into the jugular veins, therefore the reason is evident why a redness, tumor, &c. are spread through those parts. It will be observed hereafter in the cure of an inflammatory quinsy, that a redness of the neck and breast is esteemed a good sign; but then it will be made evident, that this holds

true

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true only when the inflammatory matter afflicting the internal parts is by a good translation thrown outward, and that then the parts first afflicted are relieved. But in the present case, as the tumor and redness in the neck, throat, and breast arise from an obstruction of the blood's course through the lungs, whence the veins are rendered incapable of emptying themselves, therefore it is not attended with any relief of the suffocating quinsy, and consequently this sign may be justly esteemed a bad presage. Thus in the woman^o who lay ill of a quinsy at Biton there was on the first day a reddish and hard tumor in the neck and on each side the breast; but the extremities were cold and livid, the respiration high, the drink returning through the nostrils, and the swallowing impracticable at the same time; whence it appeared that this symptom took it's origin not from a good translation but from an increase of the disease, and accordingly the patient expired on the fifth day. But since the frontal veins, and the ranular veins running under the tongue, are branches of the jugulars, it is evident enough why these are at the same time swelled with varices.

But all these symptoms observed in the worst kinds of inflammatory quinsies are accurately collected together by the antient physicians. Thus Hippocrates^p has the following passage: *A cyananche vocata homo suffocatur, & in faucibus magis urgeri videtur, & neque salivam attrahit, neque aliud quidquam. Et oculi dolent, & prominent velut strangulatis, & per eos intentè (ἀτενὲς) intuetur, neque eos convertere potest: crebro singultit & exilit, facies & fauces incenduntur, imo etiam collum. Intuentibus vero nihil mali habere videtur,*

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^o Epidem. 3. Aegrot. 7. Charter. Tom. IX. p. 235.

^p De Morbis Lib. III. cap. 10. Charter. Tom. VII. p. 586.

tur, & cernit, & audit obtusius, & præ suffocatione non intelligit, neque quid dicat, audiat, aut faciat, sed jacet ore hiantē salivam effundens. Hæc quum faciat, quinto, aut septimo, aut nono die moritur. “ In the disease called a cynanche or
 “ quinsy, the patient is suffocated, and the violence
 “ of the disorder seems to be most urgent in the
 “ fauces, so that he can neither swallow his spit-
 “ tle nor any thing else. At the same time, the
 “ eyes are painful and protuberant, as in those
 “ who are strangled; and the patient sees through
 “ them fixed, or with great attention, without
 “ being able to turn them about, has frequent
 “ hiccups, and is often obliged to get up; the
 “ face, fauces, and sometimes even the neck are
 “ inflamed. But, to the appearance of those
 “ who look on, the patient seems to be not
 “ in danger, though his perception and hearing
 “ are more dull, and from the suffocation he
 “ neither understands what he says, hears, or does,
 “ but lies with a mouth wide open discharging
 “ his spittle. When the patient exhibits these
 “ signs, he expires on the fifth, seventh, or
 “ ninth day.” It may perhaps seem wonderful
 that the concurrence of so many and so grievous
 symptoms should be capable of being supported
 by a patient for so long a time; but Hippocra-
 tes^a has remarked in another place, that those
 quinsies which have a swelling and redness in
 the neck, though they are very fatal, are never-
 theless of longer continuance than such as have no
 manifest symptoms either in the fauces or neck,
 and which strangle either on the same day, or
 on the second, third, or fourth. The like is al-
 so

^a In Coacis N^o. 362. Charter. Tom. VIII. p. 872. & in Prognosticis ibid. p. 673, 674.

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ſo given us by Aretaeus^r : *Cynanchicis quidem adest inflammatio tonsillarum, faucium, totius oris : lingua extra dentes & labia prominens, saliva effunditur, pituita crassissima ac frigida defluit. Facies rubicunda & inflata est : oculi exerti, patentes, valde rubri : potus in nares refunditur : dolores acerbi sunt, sed strangulatione vexati obscurius sentiunt : pectus & cor ardent, frigidi aeris desiderium adest ; verum admodum exiguum inspirant, donec strangulentur, intercluso in pectus transitu.* “ That
 “ in patients afflicted with a quinſy there is an
 “ inflammation of the tonsils, fauces, and whole
 “ mouth ; the tongue is thrust out from betwixt
 “ the teeth, and swelled as well as the lips ; the
 “ saliva is discharged instead of being swallow-
 “ ed, and a very thick and cold phlegm runs
 “ out of the mouth. The face looks red and in-
 “ flated ; the eyes are protuberant, wide open, and
 “ very red ; the drink is returned into the no-
 “ strils ; the pains are very severe, but the pa-
 “ tients being in some measure strangled per-
 “ ceive them the more obscurely ; the breast and
 “ heart are invaded with a burning heat, and
 “ the patients desire to have the cool air ; but
 “ they draw their breath very short, until they
 “ are suffocated, the passage into the lungs being
 “ intercepted.”

But, since so great a quantity of blood expelled from the left ventricle of the heart is sent through the carotid and vertebral arteries to the head, that Malhighi^{*} computes it to be equal at least to one third of the whole mass ; therefore the reason is evident, why this venal blood being obstructed in it's passage into the right ventricle occasions the face, eyes, &c. to be more turgid,
 and

^r De causis & signis morb. acutor. Lib. I. cap. 7. p. 5, 6.

^{*} Exercitat. Epistol. de Cerebro, p. 6.

and to occasion the functions of the brain to be impaired sooner, and before any great alterations can be observed in the rest of the body. Hence also the principal symptoms observed in the worst inflammatory quinsies afflict the head. But in the mean time the coldness and livid colour in the extreme parts of the body, which usually follow the disorder, sufficiently denote, that the free passage of the blood is impeded through the other parts of the body. But as all the viscera of the abdomen transmit their blood to the vena portarum, from thence to be conveyed into the ascending vena cava, therefore from the same cause there is at this time a great obstruction and tightness perceived about these parts as well as about the lungs; and therefore the two causes of anxiety or oppression concur together which render it intolerable, as was said before at §. 631. At the same time there is likewise a pain frequently perceived from the distention of the viscera with the accumulated blood, which is a symptom justly suspected in quinsies by Hippocrates, * when he says, *Ex anginis citra judicationem hypochondrii dolor, cum impotentia. Et corpore oboriens, latenter necat, etiamsi valde mansuetè se habere putent.* “ A pain of the hypochondrium in quinsies without a crisis, arising
 “ with weakness and insensibility of body, secretly kills, even though the patient thinks
 “ it very mild,” But he adds without a crisis, because sometimes there may be an oppression about the præcordia by a translation of the inflammatory matter relieving the fauces. But the weakness and dulness which attend at the same time sufficiently denote that the brain is oppressed from the retention of the venal blood,
 and

* Coac. Prænot. N^o. 374. Charter. Tom. 8. p. 872.

and therefore that there is the greatest danger at hand.

S E C T. DCCCVIII.

BUT every quinsy runs through the usual course of a general inflammation, and causes the patient to suffer the like changes or terminations either in a dispersion, suppuration, gangrene, or scirrhus.

It was said under the title or head of inflammation, that every inflammation had four ways of terminating ; either by resolution, when the concreted and stagnant matter being reduced to a state of fluidity is restored to it's due motion : or else that it is changed to a suppuration or a gangrene, which last is much the worst ; or finally that it ends in a scirrhus when the inflammation is neither dispersed, nor a separation made of those parts in the healthy juices, which are become unfit to continue in the vital circulation agreeable to the laws of health. All these ways of terminating an inflammation may therefore take place in an inflammatory quinsy, unless the disorder is so swift as to suffocate the patient before it can acquire any considerable age. Now as before a different method of cure was required according to the different exit of the inflammation, so the same likewise holds true in an inflammatory quinsy. The best of all methods for curing an inflammation is that by resolution or dispersion ; and therefore this course is to be taken before the rest, provided there is any reason to expect it would succeed. But more especially this method is required in the cure of an inflammatory

matory quinsy, since a suppuration is attended with so much danger from the increased tumor compressing the organs of respiration and deglutition; and likewise because there is reason to fear lest the abscess breaking should discharge it's matter into the windpipe, and suddenly strangle the patient. What the particulars are to be observed, in this method of cure, will be declared in the paragraphs next following; and we shall hereafter see what methods are convenient, when the inflammatory quinsy terminates in an abscess, gangrene, or scirrhus.

S E C T. DCCCIX.

IF therefore the signs demonstrate the disorder to be a quinsy, (§. 801, 802.) it must be immediately examined, whether as yet there is no more than a simple inflammation; (see §. 382, 383, 384.) and, if so, a resolution of it (§. 386.) must be attempted, with the greatest expedition, by the most efficacious remedies. (§. 395. to 402.) Therefore in the first place, 1. A speedy, large, and repeated blood-letting must be put in practice, until the weakness, paleness, coldness, and collapſion of the vessels, denote that the remaining strength is not able to increase the tumor and turgescence or rigidity of the vessels. 2. Copious stools are to be procured by purging draughts, and clysters of the like kind repeated. 3. It will be necessary for the diet and drink to be very thin and light; 4. With the use of nitrous and subacid medicines; And 5. By warm, moist,

moist, and emollient vapours continually drawn in by the mouth; to which add external fomentations, and such things as derive the inflammation towards other parts, as blisters, cupping-glasses, and synapisms applied to the neck and breast.

Since that kind of inflammatory quinsy which is seated either in the windpipe itself or about the larynx is of all the worst and the most suddenly fatal, therefore the cure of this is to be first premised, and by the most efficacious remedies applied at one and the same time; because, this being understood, any one may easily know what ought to be done in the other kinds of an inflammatory quinsy.

It is evident enough that only the method of curing an inflammation which is made by dispersion can here take place; for a gangrene following a violent inflammation in these parts is always fatal: and since a suppuration usually follows an increase of the symptoms which attend an inflammation (see §. 387), neither can this be waited for; for the patient would be suffocated before the abscess here formed could be brought to maturation. An examination must therefore be directly made, whether the inflammation is yet so conditioned, that we may hope to cure it by resolution or dispersion. This we know if the disorder is recent, and as yet there are no signs apparent of a suppuration begun or an incipient gangrene; concerning which see what has been said in the commentaries to §. 387, 388. But it is then called a simple inflammation, when there are those signs attending which
we

we enumerated at §. 382, which denote that the humours stagnate in the vessels as yet intire, although they are impervious.

But what means are required to resolve an inflammation was declared in the cure of an inflammation in general, in the sections here cited; and therefore it only remains for us to see what particulars are to be observed in the cure of this doubtful disease more than in a general inflammation.

1. Blood-letting is here the first and principal remedy, since, as it diminishes the quantity and impetus of the arterial blood, it prevents any further injury of the inflamed vessels, and relieves that which is already offered to them; likewise by this means the quantity of the distending humours being lessened, the vessels are restored to their elastic vibrations, whereby the obstructing matter may be attenuated and rendered moveable. Thus also the best opportunity is afforded to the contracted vessels to repel back the obstructing particles into the larger branches, when the impulse of the humours urging behind is diminished, as we have demonstrated before in the Aphorisms cited in the text. But, since in this disease there is such imminent danger of a speedy suffocation if the inflammatory tumor is increased, therefore the blood-letting is required to be both speedy and large; and likewise to be repeated 'till there is so great a weakness produced, that there can be no danger of the inflammatory tumor being increased either by the quantity or impetus of the vital humours. It will be therefore useful to let blood 'till the patient faints but always in the presence of the physician, that he may forbid any longer discharge of the blood when from the trembling of the pulse, paleness

of the eyes, lips, &c. he perceives that fainting is at hand (see the comment to §. 141.) But, if the threatening symptoms of the disease return, blood-letting is again to be instantly repeated, since the disease being speedily fatal admits not of any delay; for it is much better for the patient to languish some time by a loss of blood than to be unhappily suffocated. But since the progress of these quinsies is sometimes so swift, that they unexpectedly suffocate the patient, even at the time while the remedies are applying; therefore a severe prognostic is to be first made, lest the patient's sudden death should be easily ascribed to the copious or necessary bleeding, rather than to the violence of the disease.

Ægineta ^u is unwilling to admit such profuse blood-letting at once, ordering it to be made at several times, for fear lest, when the patient faints, the matter in the affected part should break out and strangle the patient. But, as all the vessels collapse when fainting is at hand, so there does not seem to be any room to fear an increase of the tumor in the affected parts. Nor is it any objection to this method, that Hippocrates ^x pronounces profuse evacuations to be dangerous; for he there treats especially of lessening the too great fulness of healthy athletic people; and soon after ^y he expressly declares, *ad extremos morbos extrema exquisite remedia optima esse*: “that for extreme diseases extreme remedies are the best.” Even allowing such profuse blood-letting to be often dangerous, yet it ought not for that reason to be omitted
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^u Aegineta Lib. III. cap. 37. pag. 39.

^x Aphor. 3. Sect. I. Charter. Tom. IX. pag. 7.

^y Ibidem. Aphor. 6. pag. 11.

in this hazardous disease, since, as Celsus ^z well observes, *satius sit anceps remedium experiri, quam nullum*: “It is better to try a doubtful remedy than none at all.” For, in the place which we cited from him before in the comment to § 743, he says, that sometimes the disease requires blood-letting, though the body may seem not able to support it; yet he would have this remedy put in practice, after the physician has been first convinced, *quam nulla spes sine sanguinis detractione sit; simulque, quantus in hac ipsa metus sit*: “That there are
 “no hopes without blood-letting, and at the
 “same time the degree of danger in this evaluation itself appears.” He then adds, *ubi nervi resoluti sunt, ubi subito aliquis obmutuit, ubi angina strangulatur, &c.* “That it ought more
 “especially to be put in practice when the
 “nerves are paralytic, when a person suddenly
 “loses his speech, when a patient is strangled
 “with a quinsy, &c.” Hence also in the cure
 “of a quinsy he orders, ^a *sanguinem mittendum esse, etsi non abundat*: “Blood to be let, even though
 “it does not abound.” The other antient physicians recommend large and repeated blood-letting in these most dangerous quinsies, as is evident in the writings of Hippocrates ^b, Galen ^c, and Aretaeus ^d, the last of whom applauds blood-letting to be continued from a larger orifice than usual, and until the patient faints; but he
 would

^z Lib. II. cap. 10. pag. 79.

^a Lib. IV. cap. 6. pag. 196.

^b De Morbis Lib. III. cap. 10. Charter. Tom. VII. pag. 586. De Victu in Morbis Acutis. Charter. Tom. XI. pag. 136.

^c De Curandi ratione per venae sectionem cap. 19. Charter. Tom. X. pag. 448.

^d Lib. de Curatione Morbor. acut. cap. 7. pag. 87.

would have the phyſician to guard againſt the fainting, becauſe he had known ſome periſh by it. Almoſt the like advice is given us by Trallian^e, though he does not ſeem to have made uſe of ſuch copious bleedings for fear of the patient's fainting, nevertheless repeated the uſe of the lancet, and at intervals ſhort enough.

But, ſince in theſe quinſies (as was ſaid at § 807.) the frontal veins with the jugulars and thoſe under the tongue are often ſo much ſwelled, therefore ſome phyſicians adviſe the immediate opening of thoſe veins, more eſpecially the ranulars, becauſe thus the moſt ſudden evacuation is obtained in parts neareſt to thoſe affected. Other phyſicians of conſiderable name have again condemned this method, and, even among the antient phyſicians, different opinions ſeem to have ſubſiſted upon this ſubject. Hippocrates^f orders care to be taken, *ut quam maxime procul a locis, in quibus dolores fiunt, & ſanguis colligi ſolet, ſectiones inſtituantur*: To “ make the incifions (i.e. to bleed, or ſcarify) as “ far as poſſible from the parts in which the “ pains are ſeated, and in which the blood uſed “ to be collected.” But as he talks not very conſiſtently in the ſame chapter concerning the origin and diſtribution of the veins, (and ſoon after ſubjoins, *ſic enim minime magna repente mutatio continget, & tranſlata conſuetudine efficiet, ut ne amplius in eundem locum colligatur*: “ For “ thus a great alteration will happen leſs ſuddenly, and the uſual flow of blood being tranſlated will occaſion it to be no more collected “ in the diſeaſed part;”) therefore it is not without reaſon that ſome phyſicians conclude this text to

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be

^e Lib. IV. cap. 1. pag. 231, 232.

^f De Offium Natura cap. 5. Charter. Tom. IV. pag. 3.

be not very favourable to the opinion which directs the vein to be opened in remote parts in the cure of a quinsy, since in that disorder there is rather required a sudden change, and an immediate subsiding of the parts affected. Moreover Celsus^s seems to have been of another opinion, since, in treating of venesection, he has the following passage: *Mitti vero is (sanguis) debet, si totius corporis causa fit, ex brachio: si partis alicujus, ex ea ipsa parte, aut certe quam proxima, quia non ubique mitti potest, sed in temporibus, in brachiis, juxta talos. Neque ignoro, quosdam dicere, quam longissime sanguinem inde, ubi læsit, mittendum esse; sic enim averti materiae cursum; at illo modo in id ipsum, quod gravatur, evocari. Sed id ipsum falsum est. Proximum enim locum primo exhaurit: ex ulterioribus autem eatenus sanguis sequitur, quatenus emittitur: ubi is suppressus est, quia non trahitur, ne venit quidem:* “ But blood ought to be let from the
 “ arm if it is done to relieve the whole body;
 “ but, if to relieve some particular part, it must
 “ be drawn from the part itself, or at least as
 “ near as possible, because blood cannot well be
 “ let in every part, but in the temples, arms,
 “ and near the ancles. I am not ignorant that
 “ some pronounce blood ought to be let as far
 “ as possible from the injured part, for that thus
 “ the course of the morbid matter is turned
 “ another way; but in this way the offending
 “ humor may be called upon the part itself
 “ which is affected. But this assertion is in it-
 “ self false; for blood-letting first exhausts the
 “ nearest part, to which the blood follows from
 “ the remoter parts in proportion to the quan-
 “ tity let out; but, when the stream of the
 “ blood

^s Lib. II. cap. 10. pag. 80.

“ blood is stopped, it no longer comes towards
 “ the orifice, because it is not drawn thither.”

But since we know from our present acquaintance with the circulation of the blood, that it is propelled by the action of the heart and arteries from the extremities of the latter into the incipient veins, it is certain that, when a vein is opened, the arterial blood meets with a less resistance in passing into those veins; and therefore, the force of the heart and arteries remaining the same, the blood will move swifter through those arteries which empty themselves into the veins now opened. When therefore the veins under the tongue are opened, the celerity of the blood will be increased through the arteries corresponding to those veins; and, as these are branches of the external carotid, they must increase the motion of the blood through the trunk of the external carotid, and likewise through all the branches, though chiefly through those which empty themselves into the incised veins. Since therefore in these most dangerous quinsies the least increase of a swelling often proves fatal, therefore it may perhaps be dangerous immediately to open the veins under the tongue before plentiful bleeding has been used in other more remote parts. Tulpius ^h at least condemns this practice, and assures us that he has sometimes known fatal events follow from it. Galen ⁱ also seems to have premised blood-letting in the arm, and then it was his practice to open both the veins under the tongue in violent inflammations of the fauces and windpipe; and this was also the method of

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Hippocrates

^h Observ. Medic. Lib. I. cap. 51. pag. 96.

ⁱ De Curandi ratione per venae sectionem cap. 19. Charter. Tom. X. pag. 448.

Hippocrates ^k and Trallian. ^l But among the moderns of the greatest authority Sydenham ^m first bled copiously from the arm, and afterwards from both the veins under the tongue. Since therefore there are so many physicians of the greatest authority, which agree together in this point, it seems to be the safest not to open the veins under the tongue, unless, a copious bleeding has been first made from the arm or foot. Even Celsus who was of another opinion, as we have observed before, attributes much to use in this respect, and confesses that blood should not always be drawn from the affected part or those which are nearest to it: *Videtur tamen usus ipse docuisse, si caput fractum (tactum legerunt alii) est, brachio potius sanguinem mittendum esse: si quod in humero vitium est, ex altero brachio:* “For that experience itself seems
 “ to teach that, if the head is fractured, blood
 “ should rather be let from the arm; but, if
 “ the fracture is in the humerus, the blood
 “ should be taken from the other arm.”

Hippocrates likewise used cupping and scarification in adjacent parts, not only to draw the matter of the disease outward, concerning which we shall treat at the fifth number of the present section, but likewise to make an evacuation of blood. For, the head being first shaved, he orders cupping-glasses to be applied behind each ear, and at the first vertebra of the neck as well as upon the neck itself, and after scarification to let them continue adhering to those parts for a considerable time. We know that

^k De Vi&u in morbis acutis Charter. Tom. XI. p. 136.

^l Lib. IV. cap. 1. p. 332.

^m Sect. VI. cap. 7. p. 358.

ⁿ Cels. Lib. II. cap. 10. p. 81.

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that the arterial blood passes out of the scarified parts, when the pressure of the incumbent atmosphere is taken off by a cupping-glass; and therefore, that there is by this means a most powerful revulsion made from the interior parts inflamed. Nor was Coelius Aurelianus^o content with this only, *si major fuerit tumor, ipsam quoque linguam scarificabat, atque fauces & palatum tenui & longiore phlebotomo. Etenim locali sanguinis detractione tumentia relaxantur*: “but, “if the tumor was large, he scarified the “tongue itself likewise together with the fauces “and palate by a long thin lancet: For by “a local blood-letting the swelled parts are “relaxed.” Celsus^p likewise says, *Ultimum est incidere satis altis plagis sub ipsis maxillis supra collum, & in palato circa uvam, vel eas venas, quae sub lingua sunt, ut per ea vulnera morbus erumpat. Quibus si aeger non adjuvetur, scire licet a morbo victum esse*: “that, after blood- “letting, purging, cupping, &c. have been of “no use in the cure of a quinsy, the last “remedy is to make pretty deep incisions upon the neck under the jaws, and in the palate “about the uvula, or through the veins which “are under the tongue, that the disease may “be discharged through the wounds.” By which “means, if the patient is not relieved, the “physician may be assured that this his disease is “insuperable.” But Aretaeus^a likewise recommends ligatures upon the limbs, concerning the efficacy of which in lessening the blood’s velocity we treated before at § 691.

2. How much power strong purging has in
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^o Acutor. Morb. Lib. III. cap. 3. pag. 188.

^p Lib. IV. cap. 4 pag. 197.

^a De Durat. Morb. acut. Lib. I. cap. 7. pag 87.

the cure of an inflammation by dispersion was demonstrated before at § 396. and the following ; for by this means the quantity of the distending humours is diminished, the blood is dissolved, and a revulsion is made of it's impetus towards the abdominal viscera. Hence also Hippocrates (see the place cited from him at § 396. N°. 4.) in the cure of a quinsy recommends purging of the bowels with blood-letting ; and the same practice likewise occurs in those Authors which we quoted before under the preceding number of the present section. But bleeding ought always to be premised before purging, and should even be repeated until the symptoms begin to abate ; hence Sydenham ^r, after bleeding in the arm, and in the veins under the tongue, dared not as yet to give a purge the next morning, unless the fever and pain in swallowing were in some measure abated, but after another blood-letting he deferred purging to the day following. But when the disease is urgent, and a great quantity of blood has been drawn, it seems a purge ought immediately to be given ; which practice Trallian ^s informs us he has followed with success, when the quinsy has been violent in strong and full-aged people. The antient physicians used the fresh expressed juice of the elaterium and tithymal ; but, as these are very severe and heating purges, it will be safer to use such as evacuate plentifully, but without increasing the circulation, of which kind there are several to be met with in the materia medica of our Author corresponding to the present number of this section, as also at § 396. N°. 2. But, when the swallow-

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^r Sect. VI. cap. 7. pag. 258.

^s Lib. IV. cap. 1. pag. 232.

ing is so much impeded that a patient cannot take a purging draught by the mouth, the same, injected in three or four times the quantity by way of clyster, will answer the like purpose.

3. See what has been said at § 396. N°. 5. concerning the diet of those who are afflicted with an inflammation. Hitherto ought likewise to be referred what concerns the diet of febrile patients at § 602. But since an inflammatory quinsy, concerning the cure of which we here treat, is a most acute disease, and suddenly kills if it is not speedily dispersed, therefore we need not be very solicitous about the diet, as the patient may easily support abstinence for so short a time by the use of drinks only; and indeed the patient generally refuses all sorts of food that is offered to him, because of the acute pain and intolerable anguish joined with an acute fever. Therefore the whey of milk only, or milk itself diluted with three times as much water, or a very thin emulsion of the farinaceous seeds, will be here sufficient. But all these are to be taken warm, lest all the symptoms should be increased by the cold drink passing over the inflamed parts. For, although it cannot be denied that sometimes things actually cold are useful for incipient inflammations, yet as they may be frequently prejudicial, and as there is just reason to fear they may change the violent inflammation here seated into a gangrene, prudence orders them to be abstained from. See what has been said upon this subject in the comment to § 390. But when, the larynx being inflamed, the swallowing is hindered by the most acute pain, the same liquors may be injected by way of clyster to support life, and prevent the body from being too much dried.

up, concerning which we shall treat hereafter at § 813.

4. What a considerable use nitre is of, in the cure of inflammations, has been said before in the history of inflammation, whence also it is greatly recommended by all physicians in the cure of quinsies.

But likewise acids diluted with so great a quantity of water, that they cannot too much irritate the painful fauces, are here recommended; not only vegetable acids, but also those of fossils, as the spirit of sea-salt, and more especially the spirit of sulphur by the bell, as it is called in the shops. For, although these acids coagulate the blood when they are directly mixed with it, yet experience assures us, that they are of great use if only the inflamed fauces are touched with them; and therefore these remedies are more recommended for external application than to be given internally to disperse an inflammation. Thus Sydenham^c orders, in the cure of a quinsy, after a copious blood-letting from the arm and under the tongue, to let the inflamed parts be touched with honey of roses strongly acidulated with spirit of sulphur, and afterwards he orders a mild cooling gargle to be held in the mouth. But he makes no mention of using the spirit of sulphur internally.

But it is evident enough that medicines which are composed of red roses have a manifest astringent force, and with the acid spirit of sulphur constrict the parts to which they are applied, and by that means may prevent their too great expansion; at the same time they may likewise occasion the impervious particles obstructing the smaller vessels to be repelled back into the

^c Sect. VI. cap. 7, pag. 358.

the larger trunks. But that the use of cooling, repelling, and astringent medicines externally will sometimes take place to advantage for the cure of a local inflammation, since by these means the impetus of the blood is diminished in the part itself, was proved before in the comment to § 396, No. 6. Moreover, fossil acids have acquired great reputation in the cure of these disorders, because the inflammation raised in these parts from a flux of scorbutic matter, which speedily turns into a most putrid gangrene, is so happily cured by them (see § 423. No. 2. and 432.) But at the same time it appears, that such external acrid remedies cannot be used in those inflammatory quinsies which are seated in the larynx or windpipe, and which are properly the subject of our present consideration; for these parts cannot safely be touched with such medicines: yet they are mentioned here in this section, because we deliver the general treatment and cure of inflammatory quinsies, agreeable to which the cure of others is to be conducted, as will appear in the following sections. But these medicines are properly used when the tongue, fauces, palate, tonsils, &c. are affected in a quinsy, and frequently slight inflammations of these parts are cured by those only, without bleeding and purging.

But the like remedies are also recommended by the antient physicians, namely, such as are astringent, and sometimes very acrid. Thus Hippocrates^u, when the back part of the tongue and cavity under the throat are inflamed so as to excite a quinsy, orders the swelled tongue to be anointed with green mint, smallage, origany,
red

▪ De Morbis Lib. II. cap. 9. Charter. Tom. VII. p. 561.

red roses, and nitre beat up with honey: He likewise sprinkled the inflamed uvula with flos aeris dry ^w. When the inflamed tonsils swell, Celsus ^x orders them to be gargled with restraining or repelling medicines; and to anoint them with a medicine composed of the juice of sweet pomegranates, with scissile allum, &c. but the inflamed uvula he orders to be moistened with a mixture of honey and juice of four grapes, or with galls and scissile allum; he likewise used a medicine composed of the preceding, and shoemakers ink or blacking, misy, &c. ground together with austere red wine ^y. The like remedies are also to be met with in Aretaeus ^z, and likewise in Trallian ^a.

From hence perhaps arose that method which the common people use promiscuously for the cure of all quinsies, namely, supposing a relaxation of the uvula to be the only cause of the disease, they endeavour to contract it by touching it with allum, vitriol, &c. In Zealand, some farmers are said to be famous for the cure of quinsies, by touching the inflamed fauces with a powder composed of white vitriol, sal ammoniacum, and crude allum, which they repeat several times, and often to the great relief of the patient. But from what has been said it is evident that these medicines may take place more especially in the beginning of the disease, but only in that kind of inflammatory quinsy concerning the cure of which we shall treat at §. 811.

5. By moist emollient vapours, &c.] How useful such vapours are to attenuate and dilute obstructing

^w Ibid. cap. 10. p. 562.

^x Lib. VI. cap. 10. p. 383.

^y Ibid. cap. 16. p. 389.

^z Lib. I. de Curat. morbor. acutor. cap. 7, 8, 9, p. 87. &c.
Lib. IV. cap. 1. p. 220, &c.

structing matter has been declared at large in the comment to §. 398. No. 3. But this remedy is more especially recommended in the present kind of quinsies, because the vapours drawn in directly touch the inflamed parts. Even Hippocrates^b has long ago recommended this method of cure in the worst kind of quinsies, as when he orders nitre, origany, and the seeds of cresses to be put into an earthen vessel with the mouth stopped, and infused in an equal quantity of water and vinegar, the ascending vapours being drawn through a hollow reed into the patient's mouth, taking care not to burn his throat. To avoid this last accident, Aetius^c advises to hold in his mouth a small eggshell perforated at each end, into which eggshell the end of the reed is to be transmitted so as to let the vapours be first received into the cavity of the egg, instead of drawing them directly from the reed into the fauces. But, since the vapours arising from the hot vinegar and spices may in this case excite a troublesome and most painful cough, therefore the most emollient vapours seem more convenient; but, as the vapours of vinegar are a powerful resolvent, that may be added, but in a small quantity to avoid too great irritation. For this purpose decoctions or infusions of emollient herbs are usually recommended; but the virtues of such plants do not reside in a volatile part, nor can they ascend in the form of vapours, so that the principal efficacy of this remedy depends on the vapours of the water and vinegar; yet such plants may be added, lest so simple a remedy should be despised in so violent a disease. But elder flowers are more especially useful upon this occasion.

^b De Morbis Lib. 2. cap. 9. p. 560.

^c Tetrabil. 2. Sermon. 4. cap. 47. p. 486.

occasion, because they exhale cooling vapours which are volatile enough and frequently used for the cure of an erysipelas or phlegmon; therefore the distilled waters of these flowers or of roses and lime flowers may be used with the addition of a small quantity of vinegar; a formula or prescription of which may be seen in our author's materia medica corresponding to the present number of this section.

But fomentations of the same applied externally will be likewise useful; hence Hippocrates in the place lately cited orders sponges full of warm water to be applied to the cheeks and jaws.

Besides the forementioned remedies all such are highly useful for this disease, which, being applied to the neck and breast, derive the quantity and impetus of the humours outward, whether by irritating with an acrid stimulus, or by lessening the pressure of the incumbent atmosphere. How useful it is to make a revulsion towards other parts in the cure of an inflammation has been demonstrated in the comment to §. 396. No. 4. and in the same place the principal remedies were pointed out by which this revulsion might be procured. But these remedies are applied not only with this view in the cure of a quinfy, namely, to derive the quantity and impetus of the humours from the parts affected, while the material cause of the disease continues in it's first seat; but likewise experience assures that sometimes the material cause of the disease may be obliged by these remedies to change it's place and remove to other parts. We have seen before at §. 771, that a symptomatic phrenzy arises when the inflammation seated at first in other parts of the body changes it's place, and is by a dangerous metastasis transferred to the brain.

But

But the like translation of the morbid matter is frequently observed in an inflammatory quinsy, as is evident from the observations of the antient physicians, and the experience of those who are daily employed in the practice of physic. Perhaps we might assert not without reason, that there is hardly any acute inflammatory disease more unsettled. It is frequently seen in practice that the inflammation occupying the tonsil on one side is suddenly abated, and affects the tonsil on the other side. Nor is this all, but it likewise frequently removes to other and very distant parts of the body. We read of a pain invading the spleen after the fauces had been relieved ^d. In the wife of Polemarchus, ^e who was afflicted with a quinsy and violent fever, upon opening a vein the danger of suffocation indeed ceased in the fauces, but the fever continued, and a painful swelling occupied the left knee until the fifth day; and at the same time the patient perceived a sort of congestion about the region of the heart, and heard a rattling in the breast. In another woman ^f who had a quinsy, the right hand and leg were painful, but the suffocation threatened was abated on the third day. We have seen before at § 774, that a fatal phrenzy has arose from a quinsy by a bad translation. In a strong and healthy girl seized with one of the worst inflammatory quinsies, I observed that on the third day of the disease the swallowing, which had been hitherto totally obstructed by the intense pain, became very free on a sudden; but then
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^d Hippocrat. Epidem. 2. Charter. Tom. IX. p. 144.

^e Ibidem Epidem. 5. text. 37. p. 346. Epidem. 7. textu 22. p. 566.

^f Ibidem Epidem. 5. in fine. p. 352. Epidem. textu 22. p. 562.

an intolerable pain invaded each hypochondrium, but more especially the right: hence the respiration was not only impeded, but likewise the patient was almost convulsed in bed from the intensity of the pain upon the least motion of body; and this pain continued in the hypochondria until she expired, which happened on the fifth day of the disease. In a woman of fifty years of age afflicted with the like quinsy, the pain of the fauces vanished on the fifth day; but then immediately ensued a pain on the left side of the head, with a troublesome sense of burning which on the sixth day was spread over the whole head, insomuch that the unhappy patient was obliged to sit upright in the bed, not being able to bear the pressure of the pillows upon which she lay; and this woman expired on the seventh day. I have sometimes indeed seen a quinsy relieved, when red spots have been dispersed throughout the whole body, but the event has been always doubtful; for some have expired after this appearance, and others have recovered.

But above all that kind of translation is most frequently observed, in these kinds of quinsies, by which the disease is thrown upon the lungs, as Hippocrates^s well observes, when he says, *At si, faucibus & tumoribus sedatis, in pulmonem morbus versus fuerit, confestim febris & lateris dolor insuper corripit; &, ubi hoc contigerit, plerumque moritur. Quod si dies quinque effugerit, purulentus evadit, nisi ipsum tussis illico corripuerit, Si vero corripuerit, exscreato & repurgato sputo convalescit:* “ But, if, the swelling of the fauces
 “ abating, the disease removes towards the lungs,
 “ the patient is thereupon immediately taken with
 “ a fever and pain in the side; and, when this
 “ happens,

^s De Morbis Lib. II. cap. 9. Charter. Tom. VII. p. 561.

“ happens, the patient generally expires. But,
 “ if he escapes five days, he has a suppuration
 “ formed unless he should be immediately taken
 “ with a cough. But, if he should be seized with
 “ such a cough with a considerable discharge and
 “ cleansing of the parts by spitting, he reco-
 “ vers.” Hitherto also belongs the following
 Aphorism: ^h *Qui anginam effugiunt, illis in pul-*
monem vertitur, & intra septem dies intereunt;
si vero hos effugerint, suppurati fiunt: “ They
 “ who escape from a quinsy have the disease
 “ thrown upon the lungs and expire within se-
 “ ven days; but, if they survive that space, they
 “ have matter formed in the part;” namely
 when the morbid matter translated to the
 breast is not discharged by spitting, as Hip-
 pocrates ⁱ observes in another place where he
 delivers the same prognostic. Hence also we
 may understand why in another place ^k he says,
In anginis, qui non brevi concocta exspuunt, perni-
ciose habent; “ that those quinsies are of a per-
 “ nicious kind, in which the patient after a short
 “ time does not spit concocted phlegm.” I
 have often observed this practical rule to be very
 true, when the pain of the fauces disappearing
 on a sudden there has followed a snoring or rat-
 tling in the breast, sometimes attended with a
 pricking pain of the side, sometimes impeding the
 respiration and sometimes not. Most of these
 who have been under my care have expired on the
 third, fourth, or fifth day; and, notwithstanding
 the speedy administration of the most effectual
 remedies, very few of them have escaped, and
 not without the greatest difficulties.

Although

^h Aphor. 10. Sect. 5. Charter. Tom. IX. p. 200.

Coac. Prænot. No. 367. Charter. Tom. VIII. p. 872.

Ibid. No. 371.

Although therefore in an inflammatory quinsy, which is seated either in the windpipe or larynx, every kind of translation may seem good, since there is hardly any part more dangerous that the inflammation can invade, namely, because of the imminent danger there is of suffocation; yet it appears from what has been said, that the generality of such translations usually transfer the fatal period of the disease only for a time, rather than promise a happy event. We are little surpris'd at this fatality when the disease removes upon the brain or lungs; but every one will not so readily believe that the metastasis or translation of the disease is so dangerous even when it happens upon more distant parts, if this was not proved to him by the most faithful observations a little before enumerated: All these particulars have been observed by Hippocrates in his Coan Prognostics,¹ where he condemns the disappearing of the swelling in the tongue in quinsies without signs of a crisis, as also the removal of pains either to the breast, hypochondria, or legs.

But the wisdom of the antient physicians lay in their inquiring by a careful observation which changes in diseases were salutary, and which pernicious. The former of these changes they endeavoured to promote by all means in their power; and the latter they endeavoured to remove or prevent, as far as the art as then known could inable them. Hippocrates^m has observed those quinsies to be most fatal, which manifest no apparent swelling either in the
fauces

¹ No. 370, 372, 373, 374, 375. Charter. Tom. VIII. pag. 872, 873.

^m In Prognosticis Charter. Tom. VII. p 673, &c. Coac. Praenot. No. 363, 364, 365, 366. *ibid.* pag. 872.

fauces or neck; but that those which excite a redness and swelling in the fauces, are indeed very fatal, but continue longer than the former; and that those quinsies are of all the least fatal which are attended with a redness in the neck, the erysipelas in the mean time not running inward; also that the principal hope of a happy termination of these diseases is placed in turning the swelling and redness outward as much as possible. But on the contrary, that the disease is fatal when the erysipelas arising in the neck or breast turns inward, which Hippocrates knew to happen if, the redness disappearing, there ensued an oppression in the breast with a difficulty of breathing. Therefore, in the cure of this disease, he applied cupping-glasses to the neck and throat, fomented those parts with sponges^a full of warm water, or else covered them over with cerate, ° in order to draw outward the matter of the disease. Aretaeus^p likewise has the following passage; which deserves to be well remarked: *Bonum quoque est, si in pectore magnus tumor oriatur aut insigne erysipelas. Egregius vero medicus, aut cucurbitula in pectus malum detrahit; aut sinapi ossibus pectoris aut partibus juxta maxillas imponens, extrinsecus ulcerat, & difflationem molitur. Quibusdam sana brevi tempore vitium his auxiliis exterius tractum fuit:* “ It is
 “ also a good sign if a considerable swelling arises
 “ in the breast, or a large erysipelas. But a skil-
 “ ful physician either draws away the disease
 “ in the breast by a cupping-glass, or else, ap-
 “ plying a sinapism to the bones of the thorax,
 Vol. VIII. L “ or

^a De Morbis Lib. II. cap. 9. Charter. Tom. VII. pag. 560, 561.

° De Victu in morbis acutis Charter. Tom. XI. pag. 136.

^p De causis & signis morbor. acut. Lib. I. cap. 7. pag. 6.

“ or parts about the jaws, ulcerates them exter-
 “ nally, and endeavours to discharge or dissipate
 “ the morbid matter, which has in some pa-
 “ tients been drawn outward in a very short
 “ space of time by these remedies.” The like
 remedies are also recommended by Celsus ¹ when
 he says, *Cucurbitula quoque rectè sub mento, &
 circa fauces admoveatur; ut id, quod strangulat,
 evocet. Opus est deinde fomentis humidis, nam
 sicca spiritum elidunt. Ergo admoveere spon-
 gias oportet: quae melius in calidum oleum, quam in
 calidam aquam subinde dimittuntur. Efficacissimum-
 que est hic quoque, salem calidis cum sacculis super-
 ponere*: Let a cupping-glass likewise be ap-
 “ plied directly under the chin and about the
 “ fauces, to call out the humours which suffo-
 “ cate the patient. Afterwards, it will be ne-
 “ cessary to apply moist fomentations, for dry
 “ things intercept or injure the breathing.
 “ Sponges ought therefore to be applied, which
 “ are sometimes better dipped in warm oil than
 “ in warm water. The application of salt like-
 “ wise in little bags heated is here a most
 “ efficacious remedy.” But in another place ²,
 treating of warm fomentations, he describes the
 manner in which he would have the fomenta-
 tion of salt prepared; for he condemns dry fo-
 mentations in this case: Namely, he puts the
 salt in a linen bag, then puts it into hot water,
 and afterwards applies it to the part to be fo-
 mented; or else he alternately thrusts two red-
 hot irons into the dry salt, and then slightly
 sprinkled it with water, by which means he
 procured a saline and warm juice to transude,
 with a view, *ut digereret id, quod vel præcordia*
onerat,

¹ Lib. IV. cap. 4. pag. 196.

² Lib. II. cap. 17. pag. 95.

onerat, vel fauces strangulat, vel in aliquo membro nocet: “ to digest that which oppressed the præcordia or stopped up the fauces, or else which proved injurious in some other member. ” If ground mustard-seed, fresh scraped horse-radish, or the beaten leaves of meadow crows-foot are mixed with a cataplasm prepared from emollient herbs, you will then have one of the best remedies for this indication, which by fomenting and relaxing the external parts of the neck and breast, and at the same time by irritating those parts with an acid stimulus, procure a fortunate translation of the matter outwards in these diseases.

S E C T. DCCCX.

BUT the kind of quinsy described at § 803. which is seldom so dangerous as those at § 801. 802. requires the same remedies, (809.) only not so powerful. But here anodyne, relaxing, and emollient cataplasms, applied externally, are more especially necessary.

When we treated of this kind of inflammatory quinsy at § 803, it was observed to be not so dangerous as the others which invade the larynx or wind-pipe; since here the swallowing only is injured, the respirations remaining free enough. But in the mean time it was there remarked, that this quinsy is not without danger, because it is observed so liable to a bad translation, throwing the disease upon the lungs; whence it appears that this disorder ought not to be treated in a negligent manner. But it is evident

dent enough that the same remedies are here necessary to remove the inflammation. But, as we are not in this case threatened with so sudden a suffocation as in the preceding quinsies, therefore the evacuations required by blood-letting and purging are neither to be so copious nor so sudden. But a most thin and light diet, and a drink of the same drink is required, as also those nitrous and subacid medicines which were recommended before. But, as this disease is so apt to make a metastasis or removal, it will be useful to apply emollient cataplasms all round the neck and throat, to solicit thither the matter of the disease, and prevent it from passing to the lungs. Hence also such things may be added to these cataplasms as irritate the parts to which they are applied. At the same time also these emollient applications conduce much to disperse the inflammation itself, as we observed before in the cure of inflammation at § 398. N°. 3. A form or prescription of such a cataplasm may be seen in our Author's materia medica at the number corresponding to that of the present section.

S E C T. DCCCXI.

LASTLY, when the quinsies as yet inflammatory, described at § 804, 805, 806. infest the patient; then the same remedies (§ 809, 810.) are required together, but always with the addition of moistening the mouth and fauces by the attenuating and nitrous medicines, warm watery diluents laxative and oily, which may be contained
quietly

quietly in the mouth, gently applied by gargling, or injecting by a tube; and this work is necessary to be continued to prevent the parts from growing dry.

But, when only the pharynx, tonsils, uvula, pendulous palate, &c. are inflamed, the affected parts fall under inspection, and such quinsies are usually less dangerous as we observed before. Indeed the same method of cure is required as in the preceding, but likewise the remedies should be milder, or less violent, as the danger is less. Blood-letting being premised, a cooling purge may be given; and these are either repeated, or not, according as the increase or diminution of the disease may require. But, in the former kinds of the quinsy, moistening remedies can hardly reach directly to the affected parts, except in the form of vapour only; and therefore oily, emollient, and discutient medicines have there, little or no efficacy; but in the present quinsies they may be commodiously enough applied immediately to the affected parts. Decoctions therefore of marshmallows, mallows, linseeds, and the like emollient ingredients, with the addition of nitre, vinegar, sal polychrest, &c. taken in such a quantity as not too much to irritate the inflamed parts by their stimulus, as for example, when a dram of nitre is dissolved in a pint of such a decoction; likewise infusions of elder flowers, wild poppies, melilot, &c. with the addition of honey, or the syrup of marshmallows of Fernelius, are here of the greatest use. But all these ought to be taken warm, since things actually cold are here so prejudicial by constringing the vessels, and it will

suffice for them to be contained quietly in the mouth, or else supplied by gargling only with a gentle motion of the fauces. For it is both cruel and very mischievous, when surgeons oblige such unhappy patients to be perpetually and strongly gargling; for in this manner the inflamed parts are roughly agitated, from whence rather a gangrene may be expected than a mild resolution. Hence also Sydenham^t gives it as an admonition that the very emollient gargle, prepared of the whites of eggs with the distilled waters of plantain, roses, and frog's spawn with sugar, ought not to be used in the common manner, namely, by strong gargling, but only to be held in the mouth without any agitation 'till it grows warm, and then to be spit out and renewed again. For he seems to have given a small quantity of this medicine not heated, in order to temperate the troublesome heat of the fauces; nor can this be detrimental, since a small quantity of liquor immediately grows warm when received into the mouth. But it seems to be safer to use the same gently warmed at least, more especially in the winter season. But when the parts are much swelled with a constant and copious discharge of tough phlegm (see § 805.) so that the patient cannot confine these liquors in the mouth, they ought then to be continually injected by a syringe, to prevent a dryness of the inflamed parts, and render them all perspirable as much as possible. For it was proved upon another occasion in the comment to § 422. N°. 4. that an obstructed perspiration might change a phlegmon into a gangrene. The celebrated Boerhaave saw in a patient whose tonsils and uvula were so much inflamed

^t Sect. VI. cap. 7. pag. 358:

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inflamed and swelled, as seemed to threaten suffocation at hand, that by a continual injection of a moist emollient decoction both day and night, by a syringe, the patient was enabled to support the disease 'till the abscess broke, and recovered him from the jaws of death. But cataplasms prepared of emollient ingredients are applied to the neck, because, these parts being relaxed, the inflamed tonsils may swell outward, so as to lessen the stricture of the fauces. Forms of such a cataplasm and gargle may be seen in the materia medica at the number of the present and preceding section.

But all these endeavours of art are to be used only when the inflammation seated in these parts is violent, and especially if there is an intense fever at the same time. For it sometimes happens that a slight catarrhus inflammation seizes these parts without much swelling, only with a slight sense of roughness; and then it may be easily cured, barely with nitrous diluent and emollient liquors without blood-letting or purging.

There is also a kind of quinsy invading the palate, uvula, and tonsils, which I have frequently observed, and which for the most part is easily cured, though the parts are often painful enough. This quinsy is more especially observed in those afflicted with a scurvy, and sometimes it invades many people together after the manner of an epidemical disease, chiefly in the spring time and in a warm, moist air. A slight fever precedes it, but goes off after a few hours; and then the fauces begin to be painful in one part or the other, and a white spot appears upon inspecting them, round the borders of which the contiguous parts are very red and extremely

tremely painful; yet the parts affected do not ſwell much. If the diſorder is neglected, theſe ſpots ſpread, and often eat into the affected parts to a conſiderable depth, with a putrid vapour exhaling from the mouth. Spirit of ſulphur by the bell, diluted with much water, and mixed with rob of elderberries and nitre, happily cures theſe quinſies, if it is held in the mouth oftentimes in a day. But if the patient breathes out a putrid vapour, and the parts begin to be deeply ulcerated, thirty or forty drops of ſpirit of ſea-ſalt, mixed with an ounce of honey of roſes, afford a remedy which immediately ſtops the ſpreading diſorder by anointing the parts affected; it will be then of ſervice for the patient to hold in his mouth a mixture of ſyrup of marſhmallows or honey, with the juice of the greater houſeleek after the ſpirit of ſea-ſalt has been applied, for thus the pain is happily alleviated. Now the quantity of the ſpirit of ſea-ſalt is either to be increaſed or diminished according to the various degree of putrefaction, as we directed before upon another occaſion at § 432. Such a diſorder as this is deſcribed by Aretaeus^u, where he treats concerning ulcers of the tonſils. For ſome of theſe ulcers he calls mild and inoffenſive, *alia vero peſtifera erant lata, cava, pingua, quodam humore albo concreto, aut livido, aut nigro ſordentia. Id genus ulcera ἀφθαῖ nuncupantur. Quod ſi concreta illa ſordes altius deſcendat, affectus ille eſchara & eſt, & vocatur. In ambitu vero eſcharae valida rubedo fit, & inflammatio & venarum dolor, quemadmodum in carbunculo*: “but others
“he ſays are peſtiferous, broad, hollow, greaſy,
“and fouled with a ſort of white, livid, or
“black

De cauſis & ſignis morb. acut. Lib. I. cap. 9. pag. 7.

Sect. 811. Of an inflammatory Quinsy. 153

“ black concreted or thick humour. These
“ kinds of ulcers are called aphthæ. But, if
“ their concreted fordes descends deeper, the
“ disorder is then called an eschar. But in the
“ circumference of the eschar there is a great
“ redness, inflammation of the blood-vessels and
“ pain, in the same manner as in a carbuncle.”
He then goes on to enumerate the terrible disorders which usually follow these ulcers when they spread, and which are exactly such as we mentioned in the comment to § 432. But, with respect to the cure of these ulcers, he recommends ^w such medicines which like fire are able to restrain the eating ulcerations, and cause them to fall off in scabs. But he orders the deciduous scabs to be softened and moistened with milk and starch, or ptisan drink with linseed, &c. Hence it appears, that the like method of cure with that we have described was made use of in this disease by the antient physicians. But, although a gangrenous ulceration frequently follows such quinsies, yet the forementioned method of cure has never failed me in the beginning of the disease; and it was always proved serviceable, though the disorder had arrived to a considerable malignity. But this kind of quinsy ought well to be remarked, because I have seen some mistaken in supposing a suppuration already formed, and believing the white spot to be the apex of the abscess now ready to break, especially if they were not present at the beginning of the disease, or did not observe that the ulcers attended from the beginning. But the distinction of these is easy enough, since an abscess here formed swells much more, and
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^w De Curatione Morbor. acut. Lib. I. cap. 9. pag. 89.

never comes to maturity, but when the disease is of longer standing.

As for the common opinion which has prevailed, that swallows nests are a specific remedy for all quinsies when boiled in water, and applied warm to the neck, frequently washing the fauces with a decoction of them; this may be easily borne with, provided more efficacious remedies are in the mean time not neglected, from an expectation of the dangerous quinsy being cured by this only. But this opinion, or at least one much like it, seems to be very antient. For Celsus * testifies it was a common report that those who eat a young swallow would not be in danger of a quinsy all that year; and that even swallows lately hatched, burnt with salt to ashes, and diluted with mead, made an useful remedy in the same disorder. But, although he did not much confide in this medicine, yet he thinks, *Id, cum idoneos authores ex populo habeat, neque habere quidquam periculi possit, quamvis in monumentis medicorum non legerit, tamen huic operi suo inferendum credidit*; “ since it has sufficient authority
“ among the people, and is not attended with
“ any danger, it ought therefore to be inserted
“ in his book, though it was not writ in any
“ of the works of physicians.”

S E C T. DCCCXII.

IF all these means are neglected, used too late, or not followed with a due effect, (§. 809, 810, 811.) the disease being very recent, and suffocating the patient from the seat of the disorder being above where the place

* Lib. IV. cap. 4. p. 197.

place of incision ought to be made, and attended with the worst symptoms (§. 807); and, as yet no signs of a gangrene appearing, in this case after a severe and doubtful prognostic bronchotomy must be immediately performed.

In those kinds of quinsies (§. 801, 802.) in which the inflammation is seated in the wind-pipe or larynx, the patient expires because the passage of the air into the lungs is obstructed; and from hence also the blood is accumulated in the lungs and the venal blood is impeded in returning from the head, as we said before more at large under those sections. If therefore a passage can be procured for the air to enter into the lungs, the great danger in this disease will be removed, and time may be given to cure the inflammation seated in these parts. This is to be attempted first by copious blood-letting, purging, and the other remedies of which we treated before at §. 809. namely, that the swelling of the inflamed parts may suddenly subside, and by that means the impediments obstructing the free ingress of the air into the lungs may be removed or at least greatly diminished. But when these remedies have not been used, or else applied when the disease has been too violent; or, lastly, if all these remedies have been tried without any abatement of the symptoms; nothing remains but the patient must be either delivered up to certain death, or else a passage must be made by art for the air to enter into the lungs. But, since the air can enter no way into the lungs but through the wind-pipe, it is evident, that this intention cannot be answered but by making an opening into the same. Hence this operation is called broncho-

bronchotomy. But, that it may be performed with the desired success, it is necessary for the inflammatory tumor to be seated about the larynx, or else in the upper part of the wind-pipe, that an incision may be made below the part affected, as is evident enough. But we know where the inflammation is seated from the sense of the patient; and, though there may remain some uncertainty in this respect, yet it is better to try a doubtful remedy than none at all, in a quinsy certainly fatal. But, that an incision may be made through the wind-pipe with hopes of success, it is necessary that the disease may be recent or of no long standing: for, when it has continued any considerable time, there is reason to fear lest the pulmonary arteries are by that time stuffed up by impervious blood, whence a fatal peripneumony would remain, though a passage should be procured for the air to enter into the lungs. For, when the lungs are not sufficiently expanded for want of inspired air, the resistances to the right ventricle of the heart are increased, and only the thinnest part of the blood is pressed through the extremities of the pulmonary artery into the veins; the thicker part being gradually more accumulated and compacted together hesitates in the ultimate extremities of the arteries, no longer capable of being dissolved, if the disease has been of any long continuance. But we know that such a disorder attends if the pulse is soft, weak, and intermitting, and if the extremities of the body grow cold; for in that case it is not advisable to make an incision through the wind-pipe: because, although it does not at all hasten the patient's death, yet his decease may be maliciously or ignorantly imputed to the operation, though it be not dangerous, if performed by the hand

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of a skilful surgeon. For the same reason this operation must be let alone, when the symptoms denote that a gangrene has already succeeded a violent inflammation; for such a disorder is incapable of being cured, as we shall declare hereafter at §. 816.

But in the mean time it is best never to attempt this operation, unless other physicians are called into consultation, who may witness that there were no hopes of the patient's recovery, without making trial of bronchotomy; yet certain health cannot be promised from this operation. This caution is the more necessary, because we so frequently observed in these worst kinds of quinsies that the disease is with the greatest danger thrown upon the lungs.

I am not sensible that Hippocrates makes any mention of bronchotomy, although it appears that he attempted something of this nature, that the air might have a free passage into the lungs. For in the most dangerous quinsy, when the patient being almost suffocated the eyes are protuberant as in strangled people, and the patient hears more dully without understanding any longer what is said or done, Hippocrates^y orders *fistulas in fauces ad maxillas intrudendas esse, quo spiritus in pulmonem trabatur*; "pipes to be thrust into the fauces near the jaws, whereby air may be drawn into the lungs." When Caelius Aurelianus^z relates the method in which Asclepiades used to cure quinsies, he observes that he approved of the division of the wind-pipe practised by the antients, and which

^y Hippocrat. de Morbis Lib. 3. cap. 10. Charter. Tom. VII. p. 586.

^z Acutor. Morb. Lib. 3. cap. 4. p. 193.

which they call laryngotomy, to restore the respiration. But Aurelianus ^a altogether condemns this operation, saying, *Est etiam fabulosa arteriæ ob respirationem divisura, quam laryngotomiam vocant, & quæ a nullo sit antiquorum tradita, sed caduca atque temeraria Asclepiadis inventione affirmata: cui, ne nunc occurrentes, latius respondere videamur, aut tantum scelus angusta oratione damnemus, libris, quos de adiutoriis sumus scripturi, respondebimus*; “there is also a fabulous division of the wind-pipe to restore respiration, “which they call laryngotomy, and which is not “handed down to us by any of the antients, “but it is affirmed to be a hazardous and rash invention of Asclepiades; to which we shall answer more at large in the books which we “are about to write upon the methods of relieving, lest we should in this place seem to “be brought into a prolix discourse, or else “only condemn so great a barbarity in too “few words.” Aretæus ^b likewise condemns brochotomy, though at the same time he informs us that it had been tried; for his words are, *At quicumque, strangulationem ab angina verentes, arteriam secuerunt ad inspirationem, non sane experimento rem comprobasse videntur. Quippe caliditas major inflammationis ex vulnere efficitur, & strangulatum adauget, & tussunt. Quin etiam si alioqui illud periculum evaserint, vulneris labia coalescere nequeunt. Ambo enim (sunt) cartilaginea & non unienda inter se*; whoever divide the “wind-pipe to restore respiration for fear of suffocation from a quinsy, do not seem to be well “acquainted

^a Ibid. p. 195.

^b De Curatione Morb. Acutor. Lib. I. cap. 7. p. 88.

“ acquainted with the operation by experiment.
 “ For the heat of the inflammation is increased
 “ by the wound, as well as the suffocation, and
 “ a cough is brought on. Moreover, if a pa-
 “ tient recovers this experiment, the lips of the
 “ wound cannot unite together; for they are
 “ both of them cartilaginous, and not to be
 “ sewed and conjoined together.” But for what
 reasons Aurelianus condemns laryngotomy as bar-
 barous or murderous we know not, since we
 have not the books in which he promises to treat
 of that subject. But the words of Aretaeus are
 such as may be easily refuted. For, if the inci-
 sion is made in a part of the wind-pipe below
 that which is inflamed, there is no danger that
 the inflammation will be increased by the wound.

Moreover though the incision should be made
 in a part almost contiguous, since the lips of a
 wound do not become inflamed immediately, but
 generally this happens only about the third day
 after the wound inflicted (see the comment to
 §. 158. No. 5.) we shall at least have so long
 a respite, which in so swift a disease is a consi-
 derable time, during which the cure of the pre-
 sent inflammation may be attempted by the most
 efficacious remedies, and the future inflammation to
 be feared may be avoided. But the fears of Aretae-
 us that the lips of the divided wind-pipe can never
 unite, because they are both cartilaginous, are
 without foundation; for in the Aphorism next
 following, where we shall treat of the due per-
 formance of this operation, it will appear that
 the wound is inflicted betwixt two of the cartila-
 ginous rings of the wind-pipe, without injuring
 either of them. Even though the cartilaginous
 rings themselves should be divided by such an in-
 cision, yet they might grow together again, as
 appears

appears from the most certain observations; concerning which particulars see what has been said in the history of wounds at §. 170. N°. 4. For in the numerous cases where people have lain violent hands upon themselves, or have had their throats cut by robbers, but have been afterwards perfectly cured, there is no room to doubt but that the annular cartilages were often divided. Even it appears from the most certain observations, that divided cartilages may be again united and consolidated together; a collection of which may be seen in the commentaries of the Royal Academy of surgery at Paris^c. It therefore appears from the experiments of the moderns, that the antients were mistaken when they affirmed that neither bone nor cartilage if cut asunder can increase in bulk, or unite together; concerning which see what has been said in the comment to §. 343.

Since therefore it appears from what has been hitherto said, that the wind-pipe may be divided without any danger to the patient's life, and that the wound made may be afterwards healed, it therefore remains for us to see what particulars are to be observed in the performance of this operation.

S E C T. DCCCXIII.

THIS operation is performed, after preparing the body of the patient, in the wind-pipe, about an inch below the inferior edge of the larynx, by cutting through the skin and integuments removing aside the muscles

^c Memoires de l'Academie Royale de Chirurgie Tom. I. p. 576, &c.

muscles, and making an incision through the interstice of the cartilaginous rings of the wind-pipe, inserting therein a small silver pipe or canula; and after the cause is removed, which required the operation, the cure is completed by healing up the wound; in the mean time nourishing clysters are to be administered, if the swallowing is impracticable.

Among the antient Physicians *Ægineta*^d has handed down to us this operation, according as it hath been described by *Antyllus*. But he directs the patient's head to be reclined backward, in order to make the wind-pipe more protuberant, after which a transverse incision is to be made below the larynx or head of the wind-pipe, at about the distance of three or four of the cartilaginous rings from the edge of the larynx, but so as not to divide the cartilage, but only the membrane connecting the cartilaginous rings to each other: but, if any one is very timorous in the performance of this operation, he directs the skin to be divided after it has been elevated by a hook, and then to make an incision through the wind-pipe, avoiding the vessels, if any should happen to lie in the way. But, that the wound has penetrated into the cavity of the wind-pipe, he tells us is known, if the breath rushes through the wound with a murmuring, and the patient loses his voice. But it is evident that, by performing the operation in this manner, the *sternohyoidei* and *sternothyroidei* muscles must be divided, which yet other authors advise to avoid. Hence *Aquapendens*^e advises first to separate

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^a Lib. VI. cap. 33. p. 85.^e De Chirurgicis Operationibus, cap. 44. p. 481, &c.

rate the muscles after dividing the skin and fat; that the wind-pipe may be perforated without injuring them. But, as he confesses he never^f performed this operation, the particulars which ought to be observed in this respect may be better taken from the more modern surgeons, especially those who have performed the operation themselves with success.

But as this operation is never used to be performed but in the greatest and most urgent necessity, and where blood-letting and other remedies have been almost constantly premised, there is no necessity for any great preparation of the patient before the operation is undertaken, since what has been premised may be sufficient to prevent any violent inflammation that might follow the wound inflicted in the wind-pipe, and as there is great danger in delaying.

But the part for making the incision is chosen at the distance of a thumb's breadth from the lower margin of the thyroide cartilage; and thus the thyroide gland avoids any injury as much as possible, although the extremity thereof is sometimes seated so low that it must be divided before the naked wind-pipe can appear: Then the integuments, being raised on each side of the wind-pipe, are divided with a double-edged scalpel longitudinally for three or four fingers breadth, so that the upper angle of the incision may be directly even with the middle part of the lower jaw, and that the lower angle of the incision may be directly against the rising margin of the upper part of the sternum. The muscles then being separated by the same knife, and the lower part of the thyroide gland divided so as to render the wind-pipe naked,

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^f Ibid. p. 477.

the membranous interstice betwixt the third and fourth cartilaginous ring is perforated with a lancet^g. This seems to have been the method used by Dr. Martine^h, and indeed with very good success. For he remarks, that during the time of the operation itself, before the wind-pipe was yet perforated, the patient perceived some relief, which he believed to arise from the hæmorrhage making a considerable revulsion from the part affected by the division of the adjacent vessels. From hence it seems to appear, that he did not perforate all the parts at one and the same time by a sharp instrument, but, the integuments being first divided, he then laid bare the wind-pipe. Heisterⁱ likewise describes this operation in the same manner, though he believes it to be a matter of indifference, whether the intermediate space betwixt two of the cartilaginous rings be divided, or whether one ring itself be divided likewise, that the tube may be afterwards more conveniently introduced through the wound. For he had seen in another case several of the cartilaginous rings of the wind-pipe divided without damage, in a man who had a piece of a boiled mushroom slipped into the wind-pipe threatening suffocation; but he extracted it by this operation.

Others recommend a more simple method, as when the interstice betwixt the third and fourth ring of the wind-pipe is searched for, and discovered by the fore-finger, and the place found being marked by the nail of the same finger

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^g Garengéot *Traité des Operations de Chirurgie*, Tom. II. pag. 491, 492.

^h *Philosophical Transactions*, No. 416, 448. Abridgment, Vol. VII. chap. 4. pag. 496, &c.

ⁱ *Institut. Chirurg.* Part II. Sect. III. cap. 99. pag. 721.

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is perforated by a lancet into the cavity of the wind-pipe, and afterwards the size of the wound is cautiously enlarged, by prudently directing the lancet to either side. In this manner we read of bronchotomy being performed in Garengéot^k.

But, since it is necessary for the opening thus made to continue until the cause is removed which required the operation, therefore a small tube made of silver or lead is introduced furnished with handles on each side, by which it may be secured in its situation. Hence authors advise to introduce a probe into the wound, before the lancet is taken out, by the direction of which probe a small tube may be afterwards inserted. On this account there is also another method of performing bronchotomy described^l. For a triangular sharp-pointed steel bodkin included in a silver canula, and called a trochar, is by one thrust forced through the wind-pipe into its cavity, and then, the bodkin being extracted, the silver tube is left in the wound; thus an opening is made through the wind-pipe, and the canula introduced at one and the same time. But, as this bodkin ought to be sufficiently short, and of a diameter very large, therefore the instrument cannot be easily forced through the wind-pipe, at least not without using great force, and especially, as the wind-pipe is moveable, it may be easily displaced or pressed flat. I have several times tried this method upon a dead body and in living animals, but it seemed to me very difficult, and to be attended with danger, lest the instrument pushed with a great force should

^k Garengéot *Traité des Operations de Chirurgie*, Tom. II. pag. 493.

^l Heister *Institut. Chirurg. Part II. Sect. III. cap. 99.* pag. 722.

should sometimes take a wrong course; for which reason I am inclined to think the former method preferable to it, though more operose.

Authors who have writ upon bronchotomy observe, that the tube introduced through the wound ought to be sufficiently short, lest by touching the opposite side of the wind-pipe it should excite a troublesome cough. Hence Garengeot^m delineates this instrument of half an inch in length, and would have the extremity of the canula to be one line in diameter; but the other extremity admitting the external air may be broader, equal in it's diameter to two lines and a half. But he would have the figure of it to be a little flat or compressed, the better to fit itself to the interstice betwixt the cartilaginous rings. This tube he made of silver, because lead being very flexible would be apt to change it's figure. But in the mean time it is best to have several tubes of different lengths, as sometimes a larger tube is required, as the divided parts frequently swell afterwards, so as to render a shorter tube useless. This was experienced by Martineⁿ, who laments that the leaden tube which he had prepared proved too short, since it ought to have exceeded an inch in length for the patient, upon whom he had performed bronchotomy; hence he was obliged to make use of the silver canula commonly applied by surgeons for tapping in dropsies to discharge the water from the cavity of the abdomen; but, this proving too long, he was obliged to pass it through a thick compress perforated in the middle to se-

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^m Traité des Instrumens de Chirurgie, Tom. II. Chapit. 11.
Art. 1. pag. 298.

Abridgment, Tom. VII. pag. 499.

cure it from being thrust too deep into the wind-pipe.

Most of the writers upon this operation have been likewise solicitous to prevent the dust flying in the air from passing together with it through the open orifice of the tube, in order to which they direct the mouth of the tube opening outward to be covered with cotton, scraped lint, sponge, and the like. But the celebrated Martine^o learned from experience, that no remarkable detriment happened to the patient from thence, even though the mouth of the tube was not covered, and notwithstanding the patient lay in an apartment not very clean. But, if any thing is feared from this quarter, it may be easily avoided, if a thin muslin or other cloth is placed loosely round the neck, so as to be supported by the compresses surrounding the tube, that it may cover the orifice without touching it. But it will be convenient for the air to be moderately warm in the chamber where the patient lies, because it may be more injurious by it's coldness, than when it is drawn by the common way of respiration into the lungs, being always in some measure warmed in it's passage through the mouth and nostrils.

But a greater inconvenience was found from a quantity of a mucous humour gathering about the sides of the tube running out of it's orifice, and gradually thickening diminished the cavity of the tube, obstructing the free ingress of the air, whence the Physician^p last mentioned was obliged to take out and cleanse the tube. But the inconvenience of this may be in a great measure remedied, as the outer orifice of the tube, being

^o Ibid. pag. 500.

^p Ibid. pag. 499.

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being so much wider, gives the humours a free passage outward ; but in the mean time it seems not improper, as that celebrated author observes, to have the tube double which is inserted into the wind-pipe, so that the larger may receive the less, for, by this advantage of a double tube, the innermost may be taken out and cleaned, while the outermost and larger tube is left still remaining in the wound. By this means indeed the bulk of the instrument will be increased ; but then, as we observed before, Heister was not afraid to divide one and even more of the cartilaginous rings in this operation, in order to extract a foreign body lodged in the wind-pipe ; and therefore it seems safe enough to make a larger opening, that it may easily receive a more bulky instrument.

What has been said is greatly enforced by the following case, which teacheth us how much may be expected even in the most desperate cases by a bold and experienced surgeon. A soldier, twenty-three years old, was seized with an inflammatory quinsy invading the larynx and pharynx. But so swift was the progress of the disease, that on the second day the patient's face was of a livid colour, his eyes red and protuberant, his voice shrill, and from the intolerable narrowness of the passages the miserable patient was for tearing open his fauces or throat with his own hands. A vein was immediately opened both in the arm and foot at the same time, and, as suffocation was threatened, recourse was immediately had to bronchotomy. But, as the throat was likewise swelled, it did not seem sufficient barely to perforate the wind-pipe by a lancet, and therefore the integuments being immediately divided longitudinally and the muscles separated,

the wind-pipe was then opened in the middle betwixt two of the cartilaginous rings. But the blood flowed from the wounded vessels into the wind-pipe, and excited such a cough that the canula could by no means be retained in the wound after it had been introduced, even though it was replaced several times. While all this was performing the patient was almost suffocated for want of breath, as the muscles of the parts affected were so much agitated with convulsive motions, that the aperture of the wind-pipe seldom corresponded to the wound of the integuments. This danger was still increased by the blood continuing to flow into the cavity of the wind-pipe; but the surgeon, not intimidated, concluded to try any thing rather than to desert the patient in so great a calamity, and therefore cut open the wind-pipe longitudinally, even to the sixth cartilaginous ring. This being done the patient presently breathed better, and his pulse before scarce perceptible was now immediately raised. He so disposed the patient with his head leaning forward, that the blood could no longer slip into the wind-pipe; and to the wound made in the wind-pipe he adapted a leaden plate perforated with several holes, and with wings on each side that it might be sustained by the lips of the wound and prevented from slipping into the trachea; he afterwards secured the whole apparatus with a convenient bandage, so as to give the air a free access continually through the wound into the lungs. The hæmorrhage ceased in a short time, and the day after the fever was but slight, insomuch that the patient could easily swallow liquors offered to him. As the inflammation was so much abated he removed the leaden plate, and, closing the lips of the wound together, perceived that
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the patient could breathe freely enough. The lips of the wound he united by future, as it did not seem practicable to retain them sufficiently together by any other method, and in a few days time this large wound was healed up. But still a violent cough continued, and the strength of the voice was found much weakened¹. This last symptom the celebrated Martine² observed to continue for some days after bronchotomy in the patient, upon which he performed the operation; but, removing the canula before the fourth day, he was with ease enabled to heal up the wound without future, as it was much less than in the preceding case. But how long the canula ought to be left in the wound is to be determined from the recovery of the patient's breath; for, if the patient can breathe easily when the orifice of the canula is stopped with the finger, we know that the inflammatory tumor has subsided, and therefore that the wound may be safely healed up.

But since an emphysema, or windy swelling, may so easily follow after wounds of the wind-pipe, as we observed before at §. 300. therefore this must be prevented by a convenient apparatus, excluding the air from passing easily betwixt the canula and lips of the wound, so as to insinuate into the cellular membrane; or, if this cannot be avoided in a large wound, care must then be taken to let the air have a free passage outward; yet I do not remember that any mention is made of an emphysema by the writers of bronchotomy to have ensued after that operation.

But, if the swallowing is likewise impracticable,

¹ Memoir. de l'Academ. Royale de Chirurgie, Tom. I. pag. 581, &c.

² Abridgment, Tom. VII. pag. 499.

ble, nourishing clysters will be useful. We have seen before, that the power of cathartics and the virtues of the Peruvain bark may be this way administered to the body; and the same is also true of many other remedies, as we are assured almost from daily instances in practice, when cross children obstinately refuse all medicines that are offered and required. From thence likewise it seems very probable, that nourishing clysters injected by the anus may be so absorbed as to recruit the body. But it is evident enough, that what is injected ought to be so conditioned as to require no action of the chylificative viscera, but to contain a matter ready prepared, from whence the body may be nourished. That milk, eggs, and flesh broths, have these qualities, is demonstrated before in the comments to §. 28. but flesh broths are usually preferred before the rest, as it appears from the observations of Lower, that this liquor may flow through the vessels little altered instead of blood, so as to support life. To these broths it is customary to add a little nitre, juice of citrons, or a few drops of the spirit of sea-salt, to prevent putrefaction, to which all preparations from flesh spontaneously incline. The form of such a clyster is given in our author's *materia medica*, at the number of the present section; where it is also advised first to wash the large intestines with a purging clyster, that these nourishing liquors injected may be commodiously retained. But since Sydenham* not only forbids flesh, but also strictly prohibits even the broths prepared from thence, in quinsies; therefore nourishing clysters may in this case be prepared of milk diluted, or of whey with a decoction of well fermented bread:

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* Sect. VI. cap. 7. pag. 359.

I well remember in a young man, who was afflicted with a quinsy, so that he could not swallow even a drop of liquor, I took care to have a clyster injected several times in a day, prepared of milk diluted with water, with so much success, that I was able to keep up his strength for several days, and prevent too great a driness of the body, since almost the whole of the liquor thus injected was absorbed by the veins of the intestines. Nor are liquors absorbed in the large intestines by the mouths of the meseraic veins only, but there are also lacteal vessels numerous enough dispersed through them, as the celebrated Schwenke^t observed in the dead body of a soldier, who after a full meal had the left clavicle, together with the subjacent vessels, so destroyed by a bullet, that the thoracic duct no longer remained open, but retracted itself and closed up. But he found lacteal vessels not only in the smaller intestines, but likewise in the larger without number, dispersed through the whole tract of the latter even to the rectum in the pelvis; and from thence he justly concluded in behalf of the salutary use of nourishing clysters. More observations have been collected from authors, concerning nourishing clysters, by Stalpart Vander Wiel^u.

Since therefore life may be supported by nourishing clysters, 'till the violence of the disease is over, if the quinsy is curable, there will be no necessity to try another method, which the celebrated Littre^{*} has proposed, namely, to transmit flesh broths in small quantities at a time through the nostrils into the œsophagus. At least, it seems

^t Hæmatolog. cap. 1. pag. 2.

^u Observat. Centur. 1. No. 25. Tom. I. pag. 104, &c.

^{*} Acad. de Sciences l'An. 1718. Mem. pag. 377, &c.

seems very troublesome to convey a sufficient quantity of broths by this means, nor can it be done without danger, since, by slipping sometimes into the glottis, it may cause suffocation, which that gentleman ^y plainly confesses to have happened, when this method was tried in patients who were very weak, or had an oppression in the breast.

Having thus finished what appertains to the diagnosis, prognosis, and cure of an inflammatory quinsy, it remains for us to see the various ways in which this disease, like other inflammations, may terminate, namely by suppuration, gangrene, or schirrhus; from whence again a different denomination is given to quinsies.

Of a suppurative QUINSY.

S E C T. DCCCXIV.

BUT if the disorder has advanced so far, that an incipient suppuration is now perceived in the part affected from the signs before mentioned at §. 387, in that case a passage must be attempted to be procured for the abscess by art, and the general remedies before proposed at 402 to 412. but this more especially by the constant use of an emollient gargle, and a large relaxing cataplasm; and, lastly, by opening the place which appears proper to the senses, or by bronchotomy before described at §. 812, 813.

An inflammatory quinsy must always be endeavoured to be dispersed by all the remedies in
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^y Ibid. pag. 388.

our power. But it sometimes happens that the violence of the disease, or the too late application of medicines, when the disorder has been neglected by the patient at the beginning, exclude all hopes of a future resolution. But the best method of terminating an inflammation which cannot be dispersed is that by suppuration; and therefore in this case all the endeavours of art are to be used to promote the suppuration as fast as possible, that the patient may be speedily relieved from the extreme difficulties with which he is oppressed. But by what signs it may be known that an inflammatory quinsy tends to suppuration was declared before at §. 387. where we treated upon this subject. Likewise the general remedies for procuring such a change of the inflammatory matter into pus were enumerated at the sections referred to in the present aphorism. But above all it is most required for the patient to be continually holding in his mouth a warm gargle prepared from linseeds, mallows, marshmallows, and the like most emollient remedies. For thus the inflamed parts will be continually fomented, too great a dryness of them will be avoided, and the crude inflammatory matter will be happily changed or concocted into pus. Likewise by the same means the abscess seated in the fauces will be best disposed to break forward, and discharge the collected matter into the cavity of the mouth, which is much the safest, since, if the abscess breaks backwards towards the fauces, there may be danger lest the matter should slip through the opening of the glottis, so as to threaten the patient with immediate suffocation. But cataplasms prepared likewise of the most emollient ingredients cannot indeed be immediately applied to the parts to be suppurated, but the whole neck
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and parts under the jaws are successfully wrapt up in these, since thus the efficacy of these medicines is at least intermediately conveyed to the affected parts, and those which are external, being thus relaxed and softened, yield more easily and make way for those which are swelled internally. For the tonsils which are the most frequent seat of suppurative quinsies are protuberant on each side under the angle of the lower jaw, whenever they are considerably inflamed and swelled; and therefore it is evident enough how useful these cataplasms are upon such occasions.

But it was observed before at §, 403. No. 3. that to promote a suppuration required a due motion of the vital fluids, so as to be neither too sluggish nor too violent; and it was likewise then remarked that Physicians boldly weaken the vital motion of the humours by blood-letting and other remedies, as long as there are any hopes of obtaining a resolution; but that they generally refrain from these means when a suppuration or abscess is expected, because to this purpose it is rather more convenient for the vital motion of the humours to be something more intense. But yet we are sometimes obliged to depart from this method in a suppurative quinsy, and even to repeat blood-letting, though the signs denote that an abscess is now forming. The reason is, because the swelling of the affected parts being increased; at the time of suppuration, often excites a new and dangerous inflammation by compressing the parts adjacent; whence we are then obliged still further to exhaust the body, that the vessels may collapse so as to prevent the suffocation, which is often to be feared in this disease.

An abscess of these parts usually breaks into the
mouth,

mouth, and rarely protuberates outward in the neck, so as to be there capable of being opened, though I sometimes remember this to have happened in a suppuration of the tonsils. For, since the internal parts of the mouth and fauces are not covered by the skin, a passage is more easily made that way for the matter. But the time of maturation I have found to be various in these cases : In a woman forty years old of a lax habit, I observed towards the end of the fifth day, computing from the beginning of the disease, that the abscess broke spontaneously, and discharged laudable matter ; but in others it generally happens later. But, when the fauces are continually fomented with an emollient gargle, I have seldom known the abscess exceed the ninth day before it came to a perfect maturation.

It is indeed very frequent for these abscesses to break of their own accord ; but when it appears from the signs mentioned at §. 405. that a suppuration is formed, the matter fit to be discharged and the parts appear soft, so that we may examine them by the eye and touch, it will immediately be convenient to perforate the part, to free the patient from so great uneasiness. But to open such an abscess in the bottom of the fauces with a lancet is dangerous, as that instrument may wound other parts, when the patient is from the pain, uneasiness, &c. obliged to move himself : hence Hippocrates, as we observed before in the comment to §. 805, orders such abscesses to be perforated by a sharp-pointed instrument of steel fastened to the finger. Surgeons have contrived a very good instrument, by which this intention may be answered with the greatest safety. For a lancet is concealed with a tube of sufficient length, so that it may be thrust
out

out at one end; and at the ſame time may be ſecured ſo as to enter only one or two lines, according as it is neceſſary for the lancet to be forced more or leſs deep into the part ſuppurated. But the lancet is faſtened to a ſpring, which immediately draws the point of it into the tube or ſheath as ſoon as the abſceſs is opened, when the ſurgeon removes the preſſure of his finger. Thus there is no danger of wounding the adjacent parts, though at the ſame time the point of the lancet may be commodiouſly directed to any part of the fauces that is capable of being ſeen. This inſtrument is deſcribed ^z and figured ^a by Garregeot.

But when the abſceſs is ſeated lower, in the œſophagus itſelf, ſince the affected part does not lie expoſed to the ſenſes, we cannot attempt to open it; only we muſt endeavour by the uſe of the moſt emollient remedies to make the abſceſs break as ſoon as poſſible. But what dreadful diſorders may happen, before an abſceſs thus ſeated may break, appears from the following caſe. A healthy girl, ſeventeen years old, was ſeized with a moſt dangerous quinſy together with a violent fever; and when every one imagined ſhe was about to be ſuffocated, the ſwelling of the fauces ſubſided on a ſudden beyond expectation, but then a pain, with a ſenſe of heavineſs, ſucceeded above the ſternum, where it joins to the clavicles. At the ſame time the patient's ſwallowing was very troubleſome, and became every day more difficult, 'till at laſt, if ſhe endeavoured to ſwallow but a little water ſhe was immediately convulſed in a terrible manner, and lay like one dead. The patient pointed
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^z Nouveau Traite des Inſtrumens de Chirurgie, T. I. p. 317.

^a Ibid. pag. 332.

with her finger to the affected part, where yet there was no tumor to be perceived upon examination by the Physician, who concluded that the inflammatory matter, by a sudden translation, had taken up it's seat in the gula, and occasioned a swelling which, being irritated by any thing swallowed, excited the most excruciating pain and dreadful convulsions. By the external application of a very emollient fomentation, and a drink of a mild vulnerary decoction, the abscess broke after three days, insomuch that the patient was almost suffocated by the quantity and ill smell of the matter. But by drinking a large quantity of warm water, and ejecting it again by vomit, all the corrupt matter was happily washed out, and the patient freed from the miseries which she had suffered for the space of a fortnight, being afterwards perfectly cured ^b.

But when the abscess found in the fauces so much straitens these parts by it's bulk, as to endanger suffocation by obstructing the passage of the air into the larynx, bronchotomy may then be performed. But there is seldom any absolute necessity for this operation in a suppurative quinsy, since all such patients usually recover without it. A celebrated surgeon, who has had the care of a great many patients under this disease, never knew any of them perish by it during the space of thirty-five years practice ^c. Nor do I remember ever yet to have observed a suppurative quinsy fatal, though attended with the most oppressing difficulties. For, by repeated bleeding and purging clysters, we may so exhaust the body as to make all the vessels collapse, and by that

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^b Medical Essays, Tom. I. cap. 27. pag. 274, &c.

^c De la Motte Traité complet de Chirurgie, Tom. I. p. 192.

178 Of a suppurative Quinsy. Sect. 814, 815
means command such truces as will allow us to
wait for an abscess.

S E C T. DCCCXV.

BUT that kind of quinsy, which we de-
scribed at first (§. 801, 802.), seldom
admits of so long standing as to come to sup-
puration, but it is either first resolved (§. 809.)
or proves fatal.

But those kinds of quinsies, described in the
sections cited in the text, very seldom or never
come to suppuration; for, as they are seated
either in the wind-pipe or about the larynx, and
all the inflammatory symptoms increase when a
suppuration is about to ensue, the patient is suffo-
cated before the abscess can be brought to matu-
ration. Moreover, as it was demonstrated at
§. 801. that the circulation of the blood through
the lungs becomes difficult in such a quinsy, and
consequently that the pulmonary arteries are dis-
tended with impervious blood, it is evident enough
that a fatal peripneumony must ensue, before such
a quinsy can continue long enough to admit of
a suppuration. But in the mean time it does not
seem impossible for an inflammation formed about
the larynx to come to suppuration, provided the
danger of suffocation is removed by the timely per-
formance of bronchotomy.

Of

Of a Gangrenous QUINSY.

S E C T. DCCCXVI.

IF at length the causes of the quinsy (§. 799.) are increased, and seated in a part more noble than the rest (§. 801, 802.), or even in the external parts, (§. 804, 805.) it often turns to a fatal gangrene: but this we know, 1. From the general signs of a gangrene (§. 426 to 430.) appearing in the affected parts, whose functions are also injured; 2. From the signs peculiar to this part, as if the swelling and redness, at first visible, disappear of a sudden without a just cause preceding; and if the pain likewise goes off in the same manner, the fauces suddenly appearing smooth and uniform, dry, shining, and of a livid colour: in which last case the disorder is too far advanced to admit of any relief.

In what manner an inflammation turns to a gangrene, and from what causes this happens, has been explained before in the comment to §. 388. When therefore the causes producing an inflammatory quinsy are increased, there is just reason to fear this worst kind of terminating an inflammation; namely, when, on a sudden increase of the inflammation, the influx of the vital humours by the arteries, and the efflux of them by the veins is abolished (see §. 419.). But since it was declared at §. 800, 801, 802, that in

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these worst kinds of quinsies, the free course of the blood from the right ventricle of the heart through the lungs is impeded, and that therefore the return of the venal blood, by the jugular veins from the parts above, is obstructed, it is evident enough how much a gangrene is to be feared in these circumstances; and this is also confirmed by those symptoms which usually attend the most dangerous quinsies enumerated before at §. 807. all which inform us, that not only the affected parts, but likewise all the external and internal parts of the head, are turgid with blood, continuing it's motion through the vessels either with great difficulty or not at all. But in these quinsies mentioned at §. 801, 802. which are seated in the wind-pipe or larynx, the patient is usually suffocated before the signs of a gangrene can appear; but in the other kinds of quinsies, as the danger of suffocation is not so immediately threatened, there is sometimes a real gangrene observed. But by what signs we may distinguish such a gangrene we shall now see.

1. The signs of a gangrene, either present or speedily about to happen, have been reckoned up at the sections cited in the text, from whence therefore the knowledge of them may be derived, namely, if what has been there said is applied to the affected parts whose functions are injured by an inflammatory quinsy. But as there appears chiefly a twofold distinction in all quinsies (see §. 784, 801, 802.) namely, that the tumor of the affected parts, &c. is either obvious to the senses or not, hence therefore a gangrenous quinsy admits of the same distinction. Concerning those signs which inform us of the change of an inflammation into a gangrene in these

these parts obvious to the senses, we shall treat in the second number of this section following. But, when the disorder is seated in such parts as cannot be seen, we know that the inflammation is about to turn to a gangrene, if the symptoms are the most violent, the pains most acute, and joined with an intense fever; and if these continue for two or three days without abating, and the patient is not in the mean time suffocated. But that a gangrene is already present we know if the symptoms cease of a sudden without good signs, as, for instance, if the pain goes off, and the swallowing or breathing, before very difficult, now becomes free; and yet there are no signs denoting that the matter of the disease is by a metastasis transferred to some other part, which, as we said before, frequently happens. This diagnosis is confirmed by a cadaverous countenance, a coldness and livid colour in the extreme parts of the body, with a weak and unequal pulse, which are the signs usually attending a fatal gangrene in these parts.

2. When in a part inflamed the blood urges against the obstructed vessels by the remaining vis vitæ, certain effects are produced, which at the same time are the signs of a present inflammation, as we said before at §. 381. The principal of these signs (see §. 382.) are swelling, hardness, or tension, redness, and pain. Since therefore when a gangrene is present, the vital influx of the humours into the affected part is abolished (§. 419.), consequently the effects thereon depending must be either diminished or entirely abolished likewise. We know that a gangrene attends, if the redness, tumor, and pain, suddenly disappear without signs of the inflammation be-

ing dispersed or removed to other parts : hence the reason is evident why Hippocrates says ^a, *Anginosi in lingua tumores absque signis disparentes perniciosi. Et dolores disparentes citra manifestam causam perniciosi sunt* : ‘ That anginose tumors in the tongue disappearing without the proper signs are pernicious. Also pains vanishing without a manifest cause are of pernicious consequence.’ But, since in a dead part there is no longer any motion of the humours remaining, therefore the fauces appear dry and quite smooth, because the small mouths of the exhaling arteries and absorbing veins being contracted, and in a manner dried up, disappear ; but the colour becomes gradually paler, then ash-coloured, brown, livid, and even black, (see § 427. N^o. 3.) when the dead parts incline to a great putrefaction. From all which the diagnosis of this disorder is sufficiently evident.

But it is evident enough, that no cure can be made when a most violent inflammation of these parts has occasioned a gangrene. For these dead parts are continually exposed to the air, whence follows a most speedy putrefaction, and spreading of the disorder into the adjacent parts. Nor is such a gangrenous quinsy fatal only when it is seated in the larynx or wind-pipe, but likewise when it invades the pharynx, tonsils, or moveable parts of the palate, &c. there are hardly any hopes remaining, though it appears from certain observations that these parts may suffer great detriment, life still remaining. For to cure such a disorder a separation must be made of the dead from the living parts, which cannot be effected without a new inflammation in the borders

^a In Coacis Prænot. N^o 370. Charter. Tom. VIII. p. 872.

borders of the gangrenous part with a suppuration following, as we declared before at §. 744. where we treated of separating the dead from the living parts in a gangrene. Moreover in the cure of a gangrene we had a threefold indication (see §. 433.), namely, to keep up the patient's strength, to prevent the return of the putrid matter into the veins, and to restrain and correct the putrefaction already in the humours. But the organs serving to deglutition being destroyed by a gangrene, and those adjacent being inflamed, when nature endeavours to make a separation of the dead from the living parts, it is evidently enough one of the greatest difficulties to support the patient's strength with aliments. But in what manner can the return of the putrid matter into the veins be prevented, since the most efficacious remedies for this purpose enumerated at §. 435. cannot be applied to these parts, and since the gangrenous corrupt matter continually slips down with what is swallowed into the stomach? But it is also equally difficult to restrain a putrefaction once formed in this disease, as the dead parts seated in a warm and moist place are continually exposed to the air, and such remedies cannot be applied to them in a sufficient quantity as are able to preserve, or as it were pickle the parts, and exclude putrefaction, as usually is performed in a gangrene of the external parts of the body. From all which it is sufficiently evident, why a gangrenous quinsy may be esteemed fatal.

But in the mean time this fatal prognosis can only take place, when a considerable part of the fauces is invaded with a gangrene after a violent inflammation. For, if this disorder takes place only in a small part without spreading, there

are some hopes of a recovery, as I learnt more especially from the following case. A woman of sixty-three years old, of a very good habit, and accustomed to hard labour, was seized with a quinfy in the midst of summer. There was no appearance of any disorder in the fauces, but her voice was hoarse, and she perceived an acute pain about the cricoid cartilage, an intense fever attending at the same time. After plentiful bleeding, and a cooling purge, with an emollient cataplasm continually applied to the neck, the disease was indeed relieved, and the fever greatly diminished; but the anguish about the præcordia, the extreme hoarseness of the voice, and the patient not being able to lie in bed, afforded an ill presage on the fourth day of the disease. The day following the patient was altogether free from the fever, the voice was better, and the fauces appeared moist; but she perceived a troublesome pain in her breast, and the lower part of the uvula looked black. This danger of the event being fatal was increased, because after the most troublesome night the patient's pulse was unstable or wavering on the next day, and she lay stupid without any longer perceiving the pain, the uvula continuing in the same state; but on the eighth day of the disease the extremity of the uvula which had hitherto been black began to look white, and all the symptoms abated, so that upon the eleventh day of the disease the uvula recovered its natural colour, and the woman escaped from so dangerous a disease.

It was likewise observed at §. 423. No. 2. where we treated of the causes of a gangrene, that sometimes a humour so malignant is deposited upon particular parts of the body, as will perfectly destroy by a gangrene the parts upon which

which it settles. It was there likewise observed, as also at §. 432, that we frequently see a sharp scorbutic matter deposited upon the gums, tongue, palate, and fauces, and producing a gangrene, which though difficult to remove is not absolutely incurable, provided effectual remedies are timely applied, as is evident from what we have before said under these sections. Aretaeus * has exactly described this disease in treating upon ulcers of the tonsils, as I observed before upon another occasion, at §. 811. whose description may be usefully here again repeated: for, after treating concerning a milder species of these ulcers, he adds: *Pestifera sunt lata cava, pingua, quodam concreto humore albo, aut livido, aut nigro sordentia: id genus ulcera aphthæ nuncupantur. Quod si concreta illa sordes altius descenderit, affectus ille & est eschara, & vocatur. In ambitu vero escharæ fit rubor vehemens, & inflammatio, & venarum dolor, quemadmodum a carbunculo, &c.* that those are pestiferous which are broad, hollow, greasy, or foul, with a sort of concreted humour of a white, livid, or black colour; which kind of ulcers are called aphthæ. But, if this concreted sordes or humour spreads deeper, the disorder is then an eschar or scab, and is so called. But in the circumference of the eschar there is an intense redness and inflammation with pain in the vessels, in the same manner as in a carbuncle, &c.* But it is evident enough from what follows in the same chapter, that Aretaeus does not here describe aphthæ as they are called at this day, concerning which he treats afterwards in a distinct chapter, but a true gangrene produced from a deposition of malignant matter towards the fauces; whence it follows, that

* Lib. I. de causis & signis morb. acutor. cap. 9. p. 7.

that this disorder belongs to a gangrenous quinsy : for the dead parts are converted into an eschar, and the living parts adjacent are inflamed in the circumference of this eschar, and thus the dead and corrupt parts are either separated from the living by a suppuration formed in their circumference, or else the disorder spreads in the manner which sometimes happens, as is there remarked. Nor is deglutition only impeded by this disease, but likewise the respiration is sometimes obstructed, *dum in pectus per arteriam asperam serpit, & eodem illo die strangulat : pulmo enim & cor neque talem odoris fæditatem, neque ulcera, neque saniosos humores sustinent ; spirandique difficultas & tusses enascuntur ;* ‘ when it spreads thro’
 ‘ the wind-pipe into the breast, and strangles
 ‘ the patient on the very same day ; for the heart
 ‘ and lungs cannot support such an ill smell, nor
 ‘ ulcers with foul humours, but difficulty of
 ‘ breathing and coughs ensue ‘.’ What has been said is confirmed by Aretaeus^g in treating upon the cure of this disease ; for he recommends the same thing for the cure of an inflammation and strangling, which we advise for the cure of an inflammatory quinsy ; as clysters, blood-letting, gargling, fomentations, cataplasms, cupping, &c. but he orders the gangrenous eschars to be anointed with caustic medicines that they may fall off, and that the disorder may not spread into the adjacent parts. But when the scabs or gangrenous crusts have fallen off, and the ulcers appear red, he cautiously directs the application only of the most emollient medicines ; as milk with starch, ptisan liquor, with linseeds, &c. for he takes notice that

^f Ibidem.

^g Lib. I. De Curatione Morbor. acutorum. cap. 9. p. 89.

that convulsions are then to be feared, from irritating the very painful and raw parts with acrid remedies. But all this perfectly agrees with what has been said at §. 432. treating of a gangrene within the mouth.

It was said before at §. 811. that sometimes a slight fever proceeds, before the disorder settles upon the fauces, and that when it is once fixed the fever usually ceases, unless it is excited again by the violent inflammation in the circumference of the eschar, more especially if many parts are invaded by the same disorder at one time; for then there is danger of this gangrenous corruption suddenly spreading. Hence perhaps the reason is evident why Hippocrates^h says, *Fauces autem exulceratæ cum febre, grave; sed si quod aliud signum adfuerit ex his, quæ antea prava judicata fuerunt, hominem in periculo versari, prædicendum:* 'but, the fauces being ulcerated with a fever is bad; but, if there are likewise any other signs which before denote an ill crisis, the patient must be pronounced in danger.' But he does not here seem to speak of an abscess following an inflammation, but of an ulcer devouring these parts, as is evident by comparing what he says in another place, where he treats of this diseaseⁱ. For he there observes, that those ulcers of the tonsils are more safe which arise without a fever; and adds, that they spread more especially in the summer time, and are not dangerous if they continue long without spreading or increasing; also that this disease is most familiar to young people, &c. all which particulars very well agree with what

^h In Prognostic. Charter. Tom. VIII. pag. 672. & Coac. Prænot. No. 277. ibidem p. 876.

ⁱ De Dentitione Charter. Tom. VII. p. 872.

what was said before by Aretaeus in the places before cited from him.

It is therefore evident, that a gangrene of the fauces, following a violent inflammation, hardly admits of a cure; but that the gangrene which arises from a deposition of malignant humours upon these parts without a previous inflammation is indeed dangerous, yet frequently curable, provided effectual remedies are immediately applied; which seemed necessary to be observed in this place.

S E C T. DCCCXVII,

A Quinsy of these parts turns into a schirrhus about the tonsils, uvula, or palate, from the causes before described (§. 392.) from whence it may be easily known but difficultly cured, more especially when it is already converted into a cancer (see §. 797.)

In the history of inflammation (§. 392.) it was said, that it sometimes terminates in a schirrhus when seated in a glandular part, and when the crude inflammatory matter is neither dispersed nor discharged by a mild suppuration. This disorder sometimes ensues after inflammatory quinseys, but more especially when the disease has been treated by a perverse method of cure, or when the admission of the cold air to these inflamed parts has not been sufficiently guarded against. When the ancient Physicians saw the inflamed parts suddenly swelled without rightly conceiving the reason of it, as being unacquainted with the circulation of the blood, they therefore
accused

accused an afflux of matter to the inflamed parts, and therefore often recommended in the beginning of such diseases remedies which by constringing the vessels might hinder an influx of the matter upon the inflamed parts. Hence Trallian^k advises in the cure of a quinsy, *quod si morbi fuerit initium, & materies adhuc fluere videatur, tunc repellentia potius misceri debent*; 'that if the disease is in the beginning, and the matter seems as yet to be flowing, then repelling medicines ought rather to be mixed together.' But he condemns those who use laxatives only. But why the inflamed parts swell was explained before in the comment to §. 382. and it was likewise made evident, when we treated of the cure of an inflammation, that relaxing medicines are of the greatest use. At §. 809. No. 4. we pointed out in what cases repellent and astringent medicines might be useful in the cure of quinsies. But, because in some cases such medicines have been very serviceable, therefore the use of them has been too frequent, more especially among the ignorant common people, who indiscriminately make use of allum and the like astringents almost in every kind of quinsy, esteeming the relaxation and hanging down of the uvula the only and intire cause of such disorders. Hence it often happens that an inflammation of these parts grown to the greatest height, so as to be no longer resolvable, is by the use of such remedies converted into a schirrhous, and of all parts I have most frequently known the tonsils to be thus affected. The same event happens if, an abscess being formed and broke about these parts, such patients commit themselves to the cold air before the swelling is intirely dispersed.

The

^k Lib. IV. cap. 1. p. 220.

The diagnosis of a schirrhus formed in these parts is easy enough, as it may both be seen and felt; but then the cure is extremely difficult, as we declared more at large at §. 797. But how great calamities follow when such a schirrhus degenerates into a cancer, always exposed to the air, and corroding all the adjacent parts with an acrid ichor, any one may easily imagine. All possible care must therefore be taken to prevent the inflammation from terminating in a schirrhus, with respect to which see what has been said before, concerning the cure of an inflammatory quinsy.

Of a Convulsive QUINSEY.

SECT. DCCCXVIII.

IF the nerves, subservient to the organs of deglutition or respiration, are hindered in the exercise of their functions towards those organs, there ensues a paralytic quinsy; and such a quinsy is said to happen from a dislocation of the second or any other vertebra of the neck inward. If any cause of convulsions invades the muscles of the pharynx or larynx, there follows suddenly a suffocating quinsy; and such frequently happens, goes away and returns again, in those patients who are subject to epileptic, convulsive, hysteric, or hypochondriacal fits; and in such patients this kind of quinsy may be cured chiefly by the remedies which are proper to remove the disease itself upon which it attends.

What

What numbers of muscles concur to the performance of deglutition was demonstrated in our theoretical lectures or institutes; but for muscles to be able to perform their actions requires a free influx of spirits from the encephalon through the nerves into the muscles¹. When therefore from any cause the nerves serving to motion in the muscles which are employed in these functions are disturbed in their actions, it will occasion an injury to one or more of those actions which are required in deglutition, and this will produce a quinsy, which is to be called paralytic, because it acknowledges for it's cause a palsy of one or more of the muscles subservient to deglutition. But a paralytic quinsy can seldom injure respiration, because the muscles serving to vital respiration are not seated so high, that a palsy of them can be referred to a quinsy; since it was said in the definition of a quinsy (see §. 783.) that the morbid cause must be seated above the stomach and lungs. It is indeed true, that other muscles under the influence of the will which are seated in these parts may assist the act of respiration, as, for example, the *scaleni*, *spinales colli*, &c. and therefore a palsy in these muscles may strictly speaking be referred hither; but as the vital respiration may be performed without them, and is seldom obstructed from a disorder of these muscles, therefore a paralytic quinsy chiefly belongs to the organs of deglutition. Such a kind of quinsy is observed in an hemiplegia, where all the muscles of one side are paralytic; the patient, being incapable of swallowing without the greatest difficulty, affords a disagreeable object; as the drink, saliva, &c. do for the most part run out again from the

¹ H. Boëerhaave Institut. Medic. §. 401.

the mouth. But sometimes there happens a particular palsy only of some certain muscles employed in the act of deglutition, whence if the patient's swallowing is not quite impracticable, yet it is rendered more difficult. Galen^m mentions such a disorder, which he calls a weakness of the gula, and gives us the following signs of this malady: *si ingestorum in transitu tarditas æqualis & sine dolore accidere consuevit, & in supino decubitu augetur, erecta vero cervice mitigatur, circa ullum angustiae sensum*: 'If the aliments taken in meet with a slow and even weak passage, without pain, and if this difficulty is increased when the patient lies down, but is less when the neck is erect, without any strength of stricture, or obstruction.' For, although in an erect posture the descent of the food and drink through the œsophagus into the stomach is promoted by their weight, yet that does not seem sufficient of itself to convey them readily into the stomach in swallowing. For the muscular fibres of the œsophagus both longitudinal and orbicularⁿ are principally the cause of this action, and by these only I have seen food and drink protruded into the stomach contrary to the force of gravity, in a man who eat and drank plentifully standing upon his head. When therefore the action of these fibres is much weakened or perfectly destroyed by a palsy, it is no wonder if the deglutition is much injured. But this disorder may take place not only in the fibres of the œsophagus, but also in the other muscles subservient to deglutition. Thus Tulpius^o observed in a

woman

^m De'locis affectis, Lib. V. cap. 5. Charter. Tom. VII. p. 49.

ⁿ H. Boërh. Institut. Medic. §. 74.

^o Observ. Medic. Lib. I. cap. 42. p. 79.

woman of fifty years old, that after a vomiting, vertigo, and spasmus cynicus, the muscles of deglutition were so violently relaxed, that they could not swallow a single drop, although there was neither pain, tumor, nor any obstruction to hinder; whereby the patient expired on the seventh day. A disorder related to this, and surprising enough, I observed in a woman of forty-five years old, otherwise in good health. For about nine months past, when she was going to dinner with a good appetite, she was surprised to find her swallowing suddenly obstructed without any previous cause; yet no pain was perceived, nor any tumor appeared. The physicians and surgeons called into consultation tried many remedies, but without being able intirely to remove the disease: for the swallowing remained to be hindered in such a manner, that she could not get down liquids at all, but was only able to swallow large mouthfuls of solid food. But by degrees the disorder changed for the better, so that, when she consulted me nine months after the first appearance of the disease, she was sometimes able to swallow liquids if she took five or six ounces, and endeavoured to swallow them altogether of a sudden. But a small quantity of liquor she was by no means able to swallow. But, in what manner the disease turned out at last, I am not acquainted, as she dwells in a distant place, and has not informed me agreeable to her promise concerning the event. But Jacotius^p who had seen this disease observes that such patients gradually waste away. But there are other cases observed by physicians, which inform us that sometimes the patient is slowly restored to pristine health. Thus a girl of twenty years old, be-

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^p Holler. in Coacas Hippocr. p. 97.

coming cachectic after a suppression of the menses, fell at length into a difficulty of swallowing, whereby she was reduced to a skeleton. As it was the opinion of some physicians that indurated glands, or something of the like nature, obstructed the gula, the whole length of that tube was searched with a whalebone probe, and no obstacle could be discovered; whence they concluded the disorder to be paralytic, and directed their medicines with that view, but all to no purpose. Yet, that the unhappy patient might be assisted as much as possible, the aliments divided by the teeth and thrust by the tongue towards the fauces were protruded down into the stomach by a whalebone probe, with a sponge fastened to the end. The patient made use of this artifice for a whole year, and then, gradually recovering her lost strength, she lived afterwards in good health^a.

But what remedies are convenient for a paralytic quinsy we shall declare hereafter, when we come to treat of a palsy.

Hitherto also is referred that quinsy which is said to arise from a dislocation of the vertebrae of the neck inward. For, since the pharynx and oesophagus are incumbent on the vertebrae of the neck, it is evident enough that from such a dislocation these parts must be compressed or obstructed. Add to this that the spinal medulla may be compressed from the same cause, from whence a palsy may ensue in those muscles, which receive their nerves from below the compressed part of the spinal medulla. That the vertebrae of the neck may be dislocated by a fall or other external violence there is no reason to doubt; but
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^a Stalpart. Vander Wiel Observat. Tom. II. observ. 27. p. 287.

it seems difficult to understand how this can happen by disease without external violence. But Hippocrates seems to have observed such a disease. For, where he reckons up the diseases which happen to young children after dentition, he mentions ^r also *vertebrae, quae ad occipitium, introluxationes*; “dislocations of the vertebrae inward, which are seated next to the occiput.” It is well known from anatomy that the first vertebra called the atlas is articulated with the os occipitis, the condyloide processes of which bone are received into glenoide cavities of the like figure in the atlas, next to which follows the second vertebra of the neck called epistropheus or dentatus, having a tooth-like process upon which the atlas together with the whole head are turned round. These two vertebrae are the nearest to the occiput, and therefore the dislocations mentioned in the place lately cited from Hippocrates relate to these. This is also evident from another text ^s where we read as follows: *Qui autem angina laborabant, illorum hae erant affectiones. Cervicis vertebrae introvergebant, quibusdam amplius, quibusdam minus, collumque conspicuam intro cavitatem habebat, & hac parte contactum dolebat. At cuidam quoque affectus erat infra os dentem appellatum, qui non veraeque acutus est*; “but they who have been afflicted with a quinsy, have had the following causes. The vertebrae of the neck have turned inward, in some more, in others less, and have had a visible cavity in the neck, which part was painful upon touching it. But in some patients the disorder has been likewise seated below the os dentatum as it is called,

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“ in

“ in which case the disorder is not so severe as
 “ before †.” From which place it is evident that
 sometimes the two first vertebrae of the neck turn
 inward and produce a quinsy ; but that sometimes
 the like disorder is observed in the other vertebrae
 following. But, since it is evident from anatomy
 that the dentoide process of the second vertebra
 is secured by very strong ligaments, therefore a
 dislocation of that inward seems hardly possi-
 ble in adults, unless the whole fabric of it is
 destroyed, or unless the first vertebra is dislocated
 together with it at the same time. In young chil-
 dren, where this tooth-like process is united to the
 vertebrae by a cartilage only, it's connection
 may be more easily displaced, whence the second
 vertebra may recede inward when it's process is
 broke off. Perhaps this is what Hippocrates in-
 tends in the Aphorism above cited, where he
 treats of the diseases of children. But, when this
 happens, the spinal medulla contained in the
 cavity of the vertebrae must of necessity be com-
 pressed, whence death is almost the certain con-
 sequence, as we said before upon another occasion
 at §. 170. N°. 1. Hence Celsus †, treating of dis-
 locations of the head, observes that in such a case
 the patient can neither drink nor speak, but death
 speedily ensues. But he adds, that he here speaks
 of a dislocation of the head, *non quo curatio ejus
 rei ulla sit, sed ut res indiciiis cognosceretur & non pu-
 tarent sibi medicum defuisse, si qui sic aliquem per-
 didissent* ; “ not that it admits of a cure, but
 “ that it may be known by it's proper signs
 “ and that the physician might not be thought
 “ deficient

† Vide Galen. Comment. II. in Libr. prorrh. Charter
 Tom VIII. p. 755.

“ Lib. VIII. cap. 13. p. 546.

“ deficient in his duty, if a patient should be
 “ lost in this manner.”

When therefore the vertebrae of the neck are dislocated inward, so greatly as to compress the spinal medulla, it is evident enough that no cure remains; for, although this dislocation may be reduced, yet the fabric of the spinal medulla is destroyed, more especially if the dislocation happens in the uppermost vertebrae of the neck. Hence Aëgineta^{*} advises the physician not to order medicines for such patients. But if the vertebra is not perfectly displaced, or if not one but several of them are dislocated together, the danger is less, because then the displaced vertebrae do not make such an acute angle with those that follow, whence the spinal medulla is less compressed. But such a difference of this disorder is expressly remarked by Hippocrates^y, who says, that in some the vertebrae of the neck are thrust more inward, and in others less; and then adds, that in some this happens below the second vertebra, and then the disorder is less violent. He remarks likewise, that sometimes the disorder is very round, and circumscribed by a greater compass, namely when several vertebrae are displaced together at the same time. But he observes that, if the second vertebra which he calls *dentata* is not displaced, then neither the fauces nor parts under the jaws are inflamed, though they are swelled. He then adds that neither are such patients afflicted with a general palsy, if the tumor inclines to neither side, but runs directly down; and that such have always recovered, and some of them very speedily; that others have lain forty days without a fever, but that many retain-

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^{*} Lib. III. cap. 27. p. 39.

^y Epidem. 2. Charter. Tom IX. p. 145, &c.

ed part of the tumor for a long time after, as appeared from the voice and swallowing not being perfectly free. But on the contrary, if a fever attended all things were worse, (for it must be observed, that Hippocrates before remarked, that neither fever nor inflammation attended if the second vertebra was not affected) such patients had their feet very cold, and, if they did not expire immediately, they were not able to stand upright; and he observes that all of them perished which he had known to be thus affected.

Although this disease seldom occurs, yet it cannot be denied but that it has been sometimes observed. This we are taught from the text before cited from Hippocrates; and, although Galen^z says that such a quinsy very rarely happens, yet it would seem that he had observed it^a, since he comments upon this kind of quinsy observed by Hippocrates, and says, *nunc anginae speciem exponit, quae raro a nobis visa est*; “now he explains to us a kind of a quinsy, which we have very seldom seen.” I have myself observed something of this kind in an infant ten months old, whose head was inclined backward, the throat was protuberant forward, and a manifest cavity appeared in the neck. But, as by the lamentable cries of the infant there was no opportunity of examining the affected part, I could not accurately distinguish which of the vertebrae of the neck were displaced forward. The infant could not swallow any thing, and the disorder followed after violent convulsions. No one need to wonder that such dislocations of the vertebrae should

^z Commentar. 2. in Lib. I. Prorrheticor. Charter. Tom. VIII p. 756.

^a Commentar 2. in Lib. II. Epidem. Charter. Tom. IX p. 145.

should ensue from convulsions especially in tender infants, since, even in adults and strong people afflicted with epilepsies, the limbs have been often observed distorted, dislocated, &c. Likewise medical observations inform us that tumors formed in the internal parts of the body have removed the vertebrae of the neck out of their places, which they have recovered again by degrees when those tumors have been dispersed. A remarkable case of this kind may be read in the memoirs of the royal academy of sciences at Paris ^b, and Beninet ^c observes that he has seen the vertebrae of the spina dorsi dislocated, and other bones distorted and thrust out of their articulating cavities by a great afflux of humours. Whether or no therefore an inflammatory tumor may not suddenly produce the same effect, which otherwise happens from tumors slowly increasing? at least this does not seem improbable especially in young children. But when a quinsy arising from a dislocation of the vertebrae of the neck is attended with inflammation, or when the superior vertebrae of the neck are much displaced, it is evident enough that there is hardly any room left to hope for a cure. Whence Aëgineta advises the physicians to leave such patients as incurable, as we observed before. But Aëtius ^d advises the frequent application of a cupping-glass to the neck, about the uppermost of the vertebrae, in hopes to reduce by this means such as are displaced, which may be tried. But if the disorder came on slowly and has no inflammation, the vertebrae are usually restored by degrees in children if they are

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suspended

^b Acad. des Sciences l'Ann. 1731. Memoires p. 724, &c.

^c Tabidor. Theat. Exercit. 33. p. 63.

^d Tetrabil. 2. Serm. 4. cap. 47. p. 485.

ſuſpended every day by the chin and occiput in a ſwing for that purpoſe ; for thus the weight of the body ſtraitens the ſpine, and often happily produces a cure.

But, if the cauſes producing convulſions takes place in any of the muſcles of the pharynx or larynx, there ſuddenly enſues a ſuffocating quinſy ; which, though troubleſome, is yet very ſeldom dangerous in it's own nature, unleſs it ariſes from a diſorder in itſelf dangerous, as, for example, when ſuch a quinſy attends in thoſe who are taken with a tetanos or opiſthotonos, which we obſerved before upon another occaſion in the comment to §. 787. Such a quinſy is frequently obſerved in thoſe who have weak and irritable nerves, as in hyſteric women and hypochondriacal men. It was ſaid before upon another occaſion in the comment to §. 633. that the wonderful diſeaſe called hyſteric or hypochondriacal fits may affect almoſt every part of the body, and at the ſame time produce ſuch ſymptoms as are peculiar to the part invaded by the diſeaſe. But, by what ſigns this diſorder may be diſtinguiſhed from others, we mentioned in the ſame place. Nothing more frequently occurs in practice, than the hyſteric riſing or ſwelling in the throat, which happens when, the ſphincter of the oſophagus being conſtringed, the elastic rarified air diſtends it, ſo as to excite a viſible tumor, which almoſt ſuffocates the unhappy patient. But, as theſe ſpaſms aſcend upwards from the abdomen, ſuch women frequently imagine without reaſon, that the womb aſcends up to the throat. This kind of quinſy is generally cured with eaſe by ſuch remedies as turn off the too great impetus of the ſpirits upon the muſcles of theſe parts, and which allay the inordinate motions of the ſpirits. Thus
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castor, asafoetida, galbanum, and such-like strong-smelling things applied to the nostrils, with spirit of sal ammoniacum, &c. frequently remove these disorders in a moment; but so that they will return again when the unhappy patient is affected with violent passions of the mind. I have seen some women frequently affected with this kind of quinsy, who have had their whole nervous system so irritable, that antihysterical medicines, as they are called, especially the more acrid, have rather increased the disease. This I observed especially in a girl, who was not able to swallow any thing for the space of forty-eight hours, notwithstanding the most efficacious remedies were administered without effect; but, by the application of cupping-glasses without scarification to the neck, the disorder was in a moment removed. But sometimes, though seldom, this quinsy may be of longer continuance, especially if a proper method of cure is not pursued, but purging or other evacuating medicines are given. Thus Helmont^e tells us, *Ex utero surrexisset virus, quod nil praeter gulam stringeret, sic ut a trimestri vix quidquam deglutiret matrona illustris. Accessi, malum cognovi, & confestim sanavit illam Dominus*: “ That
 “ a virus arises from the womb, which constricts
 “ nothing but the gullet, insomuch that from hence
 “ a noble mother of a family was hardly able
 “ to swallow any thing for the space of three
 “ months. When I came, knowing the disorder,
 “ the Lord immediately made a cure of the woman.”

When therefore a convulsive quinsy arises only from an inordinate motion of the spirits in hysterical and hypochondriacal patients, it may be easily cured, and usually in a very short time. But if malignant humours stagnate about some
 part

^e In Capitulo : *Amsta & Tussi* N^o. 31. p. 292.

part of the body, more especially about the præcordia, there, by consent or influence of the nerves, they may produce convulsions by disturbing all the actions of the brain (concerning which see the comment to §. 701.) This requires an expulsion of those humours by vomits and purgatives; which medicines are usually of the worst consequence in convulsions arising only from a disturbed motion of the spirits. Such a case is described in the Edinburgh medical essays ^f, where a young man afflicted with a convulsive quinsy was happily cured by discharging the bilious and foul humours with emetics and purgatives. But then the patient's strength, and his continually perceiving a bitter and salt taste in his mouth, sufficiently pointed out, in what manner and by what remedies the cure might be attempted.

S E C T. DCCCXIX.

FROM this history given (§. 783. to 819.) we may understand the reason of the following observations of Hippocrates.

A quinsy without any visible sign, manifestly itself only by a suffocating orthopnoæ, with an acute fever and great pain of the head or thighs without good signs, is speedily fatal, to wit, on the first, second, or third day.

A symptomatic quinsy arising from other inflammatory diseases, or of the kind described at §. 801, 802, proceeding from those at §. 803, 804, 805, is fatal.

A quinsy causing a frothiness of the mouth, discharging a thick rheum or serum; expelling
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^f Medical Essays Tom. I. p. 277, &c.

ling the intestinal faeces insensibly; arising in a very acute fever without any conspicuous sign, or attended with a removal of the tumor, redness, and pulsation in the fauces or tongue, but continuing to suffocate the patient is always and speedily fatal.

Having now finished the general history of a quinsy, and likewise described such particulars as seemed most necessary to be observed in the several kinds of quinsies, we come at last to certain corollaries which properly relate to the prognosis of a quinsy, and are all of them found in Hippocrates. But, from what has been said before, the reason of these may be easily derived; and, as we have treated of these in the sections above cited, it will be sufficient for us to point out the places where they are to be found.

A quinsy without any visible sign, &c.] For then an inflammatory swelling occupies the larynx or internal membrane of the wind-pipe; concerning which, see what has been said in the commentaries to § 801. and 802. where we likewise took notice of those passages in Hippocrates which contain this prognosis. But, concerning the pain of the thighs happening without good signs in those afflicted with a quinsy, see what has been said at § 809. No. 5.

A symptomatic quinsy arising from other diseases, &c.] One disease is said to be symptomatic or consequent of another, when the first still continues, and is joined by the latter; as Galen^s observes, when he says, *Degenerat autem morbus, quum priore cessante succedit alter; supervenit*

^s In Commentariis in Aphor. 11. Sect. VII. Charter. Tom. IX. pag. 297.

venit autem, quum, priore permanente, alter accedit :
 “ A disease degenerates when the first ceases and
 “ is succeeded by another ; but, when another
 “ disease happens while the former continues, it
 “ is said to be supervening.” Therefore such
 an addition denotes an increase of the first disease,
 as the disorder is propagated to other parts of the
 body ; or at least it denotes that the solid and
 fluid parts of the body have been so changed by
 the disease, as to injure other functions likewise.
 Hence it was customary for the antient physicians
 to say, *morbis alios morbos & symptomata super-*
venire, Veteribus Medicis moris fuit dicere, quae
ipsius morbi augescentis ratione contingere consueve-
runt : “ That diseases and symptoms supervene
 “ one upon another, which usually take place in
 “ proportion to the increase of the first disease
 “ itself.”^h Since therefore an inflammatory
 quinsy is often very dangerous in itself, it is
 evident enough, that there is hardly any room to
 hope if the quinsy supervenes some other in-
 flammatory disease. For Hippocratesⁱ rightly
 observes, *In morbis, qui alter alteri superaccedit,*
plerumque interficit. Quum enim corpori a priori
morbo debilitato alter morbus supervenerit, prae im-
becillitate prius perit, quam alter, qui posterius ac-
cessit, morbus desinat : “ That it generally proves
 “ fatal in diseases which are superadded upon
 “ the back of each other. For that, the body
 “ being weakened by the former disease when
 “ the other supervenes, it perishes by the weak-
 “ ness from the former, before the latter disease
 “ terminates.” But since the cure of a quinsy re-
 quires

^h Galen in Commentariis in Aphor. 35. Sect. III. ibid.
 pag. 270.

ⁱ De Affectionibus cap. 6. Charter. Tom. VII. pag. 626,
 627.

quires copious blood-letting, cooling purges, &c. (ſee §. 809.) the patient weakened by the preceding diſeaſe is often incapable of bearing theſe remedies. The danger is ſtill more increaſed, be-
 cauſe *omnis ejuſmodi ſupervenientium ortus non parvos nec faciles, ſed magnos & malignos morbos ſequatur*; “all ſuch ſupervening quinſies ariſe
 “neither from ſlight nor eaſily curable diſeaſes,
 “but follow from ſuch as are violent and ma-
 “lignant.”^k For in an ardent fever, as we ob-
 ſerved at § 741, the ſwallowing is ſometimes in-
 jured with a very bad preſage; of which we
 likewise took notice before upon another occa-
 ſion in the commentaries to §. 772, 785, 802.

When an inflammatory quinſy invades the
 muſcles which ſerve to draw up the os hyoides
 and larynx (§. 803.) or pharynx (§. 804.) or ſeat-
 ed in the tonſils, uvula, pendulous velum of the
 palate, or it's four pterygoſtaphylini muſcles
 (§. 805.) is ſo increaſed as to ſpread the diſorder
 into the wind-pipe (§. 801;) or larynx (§. 802.)
 the diſeaſe muſt be evidently enough fatal. Nor
 is there much room to hope, when the in-
 flammatory matter by a metaſtaſis, leaves it's firſt
 ſeat in the tonſils, pharynx, &c. and is deposited
 upon the larynx or wind-pipe; as is evident
 enough from what has been ſaid at § 801, 802.

A quinſy cauſing a frothineſs of the mouth,
 diſcharging a thin rheum or ſerum; expelling
 the inteſtinal faeces inſenſibly.] It was ſaid before
 at §. 805. that there is a perpetual drain of phlegm
 to the cavities of the tonſils, when they or the
 parts circumadjacent are inflamed; from whence
 in this kind of quinſy there is often a continual
 ſpitting of frothy phlegm: yet this kind of
 quinſy

^k Galen in Commentariis in Aphor. 11. Sect. VII. Charter.
 Tom. IX. pag. 297.

quinsy is usually less fatal as we observed before, and therefore we do not here treat of that frothy phlegmatic spitting. But, in the worst and most fatal quinsies, almost all the same appearances are observed as in those who are strangled by a halter (see § 807.) in whom we behold as a very disagreeable object, a thick froth to be collected about the mouth and lips while they are dying. Hence Hippocrates¹ says, *Qui strangulantur, ac dissolvuntur, nondum tamen mortui sunt; ex illis non convalescunt, quibus circum os spuma fuerit*: “ They who are strangled
 “ and set at liberty before they are perfectly
 “ dead; if there is a froth collected about their
 “ mouth, such never recover.” Where it is to be observed that he does not call it a defluxion of phlegm, but a collection of it about the mouth. For in this case the passage of the blood through the lungs is obstructed from the right to the left ventricle of the heart, whence it is urged with so great force by the pulmonary arteries, that a humour more than usually viscid is expressed through the open extremities into the air cells of the lungs, which under these great difficulties cannot be discharged by spitting, but being collected together ascends into the cavity of the fauces and fills the mouth, and at last gathers about the mouth in froth. We almost constantly observe the like to happen in dying people, when a few hours before death there is heard that disagreeable rattling in the throat and breast from this viscid humour collected in the lungs and bronchia; which humour is likewise usually discharged from the mouth and nostrils after death; when all parts are contracted by the cold. Such
 a froth

¹ Aphor. 43. Sect. II. Charter. Tom. IX. pag. 82.

a froth therefore in a quinsy denotes suffocation and death.

A continual draining of a thin serum from the mouth is also one of the worst signs in an inflammatory quinsy. It was said before at §. 793. that such a flux of serum may proceed from a compression of the larger veins which are here seated, to return the blood from the head to the heart; and the experiment of Lower, by tying the jugular veins in a dog, demonstrates that all the adjacent parts are overflowed with a thin serum in a great quantity. When therefore this symptom is observed, we may conclude that the veins are compressed by an inflammatory tumor, whence those malignant consequences enumerated at §. 807. may speedily follow, as we there observed more at large.

But an evacuation from the bowels without being sensible to the patient is by Hippocrates condemned as fatal, as we said before in the comment to §. 719. and this is more especially true in quinsies, where this symptom denotes suffocation at hand; and it is likewise observed, that those who are strangled by the halter discharge their faeces contained both in the intestines and bladder. In that part of the Coan Prognostics which treats of the different presages of a quinsy, there is a passage relating to this subject, namely, *Quibus per vehementiam pulsationis (venarum) stercus derepente per alvum secedit, lethale*: “ That
 “ a sudden discharge of the intestinal faeces in
 “ those who have a violent pulsation of the
 “ blood-vessel is a fatal sign.”^m But Foefius ⁿ will have such a violent and conspicuous pulsation to be

^m Coac. Praenot. No. 368. Charter. Tom. VIII. pag. 72.

ⁿ Tom. I. pag. 175.

be obſervable in inflammatory quinſies, when the arteries in the neck, temples, and inflamed parts move with a violent pulſation: but in the mean time this prognoftic ſeems not without reaſon to be read otherwiſe, with Duretus,^o who put ſtrangulation for pulſation; and thus the prognofis before-mentioned in a quinſy is fairly confirmed by the following reading of it, namely, that a ſudden diſcharge of the inteſtinal faeces from the violence of ſuffocation is a fatal ſign.

Taking place in a very acute fever without any viſible ſign.] How fatal an inflammatory quinſy is which appears only by ſtrangling without a viſible ſign, we have already ſeen under the preſent ſection. And we likewise demonstrated that the quinſy is fatal, which ſupervenes or ariſes ſymptomatically from other inflammatory diſeaſes. The ſame is alſo true if the like quinſy ariſes in a very acute fever even though not inflammatory, (for that there are ſuch fevers was proved under the title of putrid continual fevers;) as is evident enough from what has been ſaid before. This is likewise confirmed by the following Aphoriſm of Hippocrates^p: *Si febre detento, tumore non exiſtente in faucibus, ſuffocatio de repente ſupervenerit, lethale. Si febre detento de repente cervix intorqueatur, ac vix deglutire poſſit, tumore non exiſtente, lethale*: “ If ſuffocation ſuddenly ſupervenes without a ſwelling in the
“ fauces in a patient afflicted with a fever, it
“ is fatal. If one afflicted with a fever has his
“ neck ſuddenly diſtorted, and is hardly able to
“ ſwallow without a tumor, it is fatal.” Where it is to be obſerved, that he equally condemns a fatal quinſy which injures the ſwallowing as well
as

^o In Coac. Hippocrat. pag. 237.

^p 34. & 35. Sect. IV. Charter. Tom. IX. pag. 154, 156.

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as that which intercepts the respiration, provided they supervene of a sudden in acute fevers. For in the last case the neck seems to be distorted by a convulsion of the muscles; but in the first case the muscles closing the glottis are affected in like manner. But how dangerous convulsions are which supervene in an acute fever was declared at §. 712, 734, 741. and it is evident enough that this danger is increased, when convulsions invade the muscles which are subservient to deglutition or respiration.

When the swelling, redness, &c. disappear without good signs.] For then the quinsy injuring deglutition, and being less dangerous, is changed into that which intercepts the respiration, and which in this case is always fatal, as we observed before in the second paragraph of this section.

Of a true PERIPNEUMONY.

S E C T. DCCCXX.

IF a true inflammation takes place in those vessels of the lungs which are disposed to be inflamed, the disease is called a peripneumony.

It is usual to define a disease chiefly two ways, either by collecting together the appearances which always attend the disease to be defined, or else from the proximate cause of the disease when that is known. We have already seen an instance of the first method of defining a disease in a phrenzy, which was said to be present, when

a fierce and perpetual delirium ensued with an acute continual fever (see §. 771.). In the same manner we shall also hereafter define a pleurisy at §. 875, and then from the whole history of the disease we shall determine what is its proximate cause. The other method of defining a disease supposes that itself, namely, an exact knowledge of the immediate cause of the disease, is only made evident by all the appearances of the disease collected together; and such is the definition of a peripneumony here given. The first method of defining serves to distinguish the disease, whose nature is inquired after by its pathognomic or characteristic signs from every other disease, and therefore serves to prevent confusion, or mistaking one disease for another.

But the last method supposes the individual nature of the disease to be already known, and describes it in few words. Both these methods have been used indifferently by the celebrated Boërhaave; yet so, that, when he makes use of the former method, he afterwards derives the proximate cause of the disease from the history of it before delivered; but, when he uses the latter method of defining a disease, he afterwards proves the truth of the definition given, from all the appearances that have been observed throughout the course of the disease defined. Thus, for example, after having defined a phrenzy from the appearances which always attend that disease (§. 771.), he then derives the proximate cause of a phrenzy (§. 776.) from the whole course of the disease, and from such particulars as could be observed in the bodies deceased of the same disease; namely, that it is a true inflammation of the meninges of the brain: and in the same manner he likewise proceeds in the history of a pleurisy (§. 882.

(§. 882.) after defining it in this method. But in a peripneumony, whose proximate cause in this definition he supposes to be known, he afterwards at §. 846. derives it as a corollary from the whole history of the disease, that what the Antients have described under this denomination is a true inflammation of the lungs.

But it is likewise evident, that the ancient Physicians themselves esteem the disease which they call pneumonia, or peripneumonia, to be an inflammation of the lungs. For thus Hippocrates^a says in treating of this disease, *Pulmo ex calore tumens*: 'The lungs tumefied with heat.' But heat and tumor are signs of inflammation according to what has been said at §. 370. and 382. So likewise in another place^r he observes, that a peripleumony proceeds from an ardent fever; for it is to be observed, that he uses the terms peripleumonia and peripneumonia promiscuously. But in the commentaries to §. 741. it was proved, that by an ardent fever the blood is so much inspissated, that it excites inflammations almost throughout the whole body. Aretaeus^s very well defines the disease thus: *Haec est aegritudo, quam peripneumoniam vocamus, inflammatio pulmonis cum febre acuta*: 'This disorder, which we call a peripneumony, is an inflammation of the lungs with an acute fever.' The like is also said concerning this disease by AEGINETA^t and TRALLIAN^u.

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In

^a De Morbis, Lib. III. cap. 7. Charter. Tom: VII. pag. 585.

^r De Morbis, Lib. II. cap. 25. Charter. Tom. VII. pag. 576.

^s De Caus. & Sign. acutor. Morbor. Lib. II. cap. 1. pag. 10.

^t Lib. III. cap. 30. pag. 40.

Lib. V. cap. 2. pag. 241.

In a peripneumony therefore, there is an inflammation of the lungs. But in the history of inflammation §. 371, 379, it was demonstrated that this disorder can only take place in converging vessels, where the fluid passes from a larger capacity to a less; and therefore not all the vessels of the lungs, but the arterial only are subject to inflammation. For every inflammation supposes obstruction; and it was proved in the comment to §. 119, that obstruction cannot take place in the veins, because the fluid moving through the veins from a narrower to a larger capacity would remove that which might occasion the obstruction.

But this present disease is called a *true* peripneumony, when the blood, being rendered impervious by an inflammatory spissitude, hesitates in the narrow extremities of the arteries, in order that it might be distinguished from another species of this disease, concerning which, we shall treat hereafter under another title, namely, a Spurious Peripneumony, which takes its origin from tough phlegm stuffing up the lungs.

S E C T. DCCCXXI.

BUT the vessels subject to this inflammation are the bronchial and pulmonary arteries, with their lateral lymphatic arteries.

But in the lungs we observe two kinds of arteries; that called pulmonary, which receives all the blood from the right ventricle of the heart, and transmits the same through its ultimate extremities into the pulmonary veins, from whence it

it passes into the left ventricle. The other artery, called bronchial by Ruyfch * who described it and gave it that denomination, because, creeping or spreading upon the bronchia, it is extended even to their extremities; and this artery, which is infinitely less than the former, serves for the nutrition of the substance of the lungs themselves. For it appears to be a constant rule of nature, that the viscera, which change by their fabric the common humours brought to them for the use of the whole body, have still other arteries peculiar to themselves, which bring the vital blood destined for their nutrition. Thus, for example, in the liver the trunk of the vena portarum brings the blood to be changed by the liver itself for the common good of the whole body; but the hepatic artery conveys blood for the nutrition of this viscus. Thus also in the kidneys, besides the emulgent arteries, there are observed other arterial branches which serve for the nutrition of the kidneys. From hence is derived the great argument in physiology, proving the efficacy of the lungs in a healthy body to be of more importance than all the viscera, because no part of the whole body receives the least drop of arterial blood, until it has first passed through the lungs, not excepting even the substance of the lungs themselves. Were it not for this, the lungs might receive vital humours or nourishment from branches of the pulmonary artery; whereas, on the contrary, we always observe an arterial arch or circle transmitted to the lungs from the aorta itself, its intercostal branches, or those of the oesophagus †.

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* Dilucid. Valvul. cap. observ. 15. pag. 21.

† Winslow, Exposit. Anatomique Traité des Arteres N^o. 109, &c. pag. 373.

But an inflammation may take place, not only in the larger arteries which convey red blood, but likewise in the smaller lateral branches of those arteries, which by their narrowness do not naturally admit of red globules; or, if they receive the red blood by dilatation in the beginnings of them, yet they cannot transmit the same through their ultimate extremities (see §. 372.). But it was also proved before at §. 379, that the like disorder may take place in vessels still much smaller. Therefore a phlegmon or true inflammation, an erysipelas, and an oedema calidum, may take place, according as vessels of different magnitudes are obstructed by impervious matter, and at the same time urged forward by the impetus of the vital fluids more powerfully moved by a fever. Hippocrates^z even formerly makes mention of an erysipelas in the lungs, which he says is occasioned, *quum supra modum is resiccatus fuerit. Exsiccatur autem & ab ardentibus, & a febris, & nimio labore & intemperie*: ‘When the lungs are too much dried up. But that they are dried up by inflammations and by fevers, as well as by too much labour and intemperance.’ But he observes, that this erysipelas of the lungs is sometimes happily removed outward; and that, unless this happens, it putrefies or renders the whole lungs purulent internally. He then adds, that, if this erysipelas thrown outward returns inward, there are no hopes remaining; all which is perfectly agreeable with what he says in other places concerning an erysipelas.

^z De Morbis, Lib. I. cap. 8. Charter. Tom. VII. pag. 540.

S E C T. DCCCXXII.

HENCE again we may conceive two kinds of the peripneumony; one seated in the extremities of the pulmonary artery, the other in those of the bronchial arteries.

The reason of this is evident from what has been said.

S E C T. DCCCXXIII.

AND it will directly appear, that the first is very dangerous, but that the latter is attended with less danger; yet one may produce the other, and there are many causes in common to them both.

For, when the impervious blood begins to hesitate in the extremities of the pulmonary artery, the free passage of the blood is impeded through the lungs from the right to the left ventricle of the heart, which yet is absolutely necessary to life, as was declared in the comment to §. 1. whence it is evident, that such a peripneumony is very dangerous. But, since the like disorder seated in the bronchial arteries does not so directly injure the free passage of the blood through the lungs, there is less danger to be apprehended from thence. But in the mean time, though this last disorder is not so dangerous, yet the worst consequences may follow, unless the inflammation formed can be removed by a

mild resolution, since the other ways of terminating an inflammation in the lungs, either by a supuration, gangrene, or schirrhus, are fatal, or else usually leave behind the most stubborn chronic diseases.

Moreover the bronchial arteries, being inflamed, easily affect the branches of the pulmonary artery, which are not only contiguous together in all parts, but are likewise joined in many places by anastomoses^a. For inflamed vessels dilate and swell by the impulse of the vital fluids urging on the back of the obstructions, and by that means compress and obstruct all the adjacent vessels, as we explained in the comment to §. 382.

Since therefore the branches of the bronchial and pulmonary arteries lie so close to each other, it is evident enough that these two kinds of the peripneumony may be produced by many common causes, although there are some which rather affect the branches of the pulmonary artery, or the blood moved through them, as we shall see in the aphorism next following.

S E C T. DCCCXXIV.

TH E S E numerous causes may be reduced, 1. To those general ones which excite inflammation of every kind throughout the whole body (§. 375 to 380.). 2. To those which more especially affect the lungs; such are too great moisture, dryness, heat, cold, density or rarity of the air, or it's being replete with exhalations, caustic, astringent,

^a Ruysch. Catalog. rari r. pag. 162.

gent, or coagulating, so as to injure the lungs; chyle from gross, dry, viscid aliments, with or without a mixture of acrid particles; violent exercise of the lungs by running, wrestling, straining, singing, calling aloud, riding on horseback against a strong wind; coagulating, caustic, or constringing poisons transmitted into the veins leading to the heart; violent passions of the mind; a quinsy with an oppression about the breast, an orthopnoea, violent pleurisy, or great inflammation about the diaphragm.

1. Hitherto belong all those causes which are capable of exciting inflammation in other parts of the body, whether by rendering the fluids imperious, by diminishing the capacity of the vessels, or even by driving the grosser fluids into the dilated orifices of the smaller vessels by an error of place; but, concerning all these, we treated under the history of inflammation at the sections cited in the text.

2. There are also other concurring causes, which deserve to be well considered, and which act more upon the lungs than upon the rest of the body. But among these the principal are :

The air offending by its moisture or dryness, &c.] For although the air surrounds the body on all sides, and is conveyed together with the food and drink into the stomach and intestines, yet it affects no part of the body more than the lungs, which require to be continually filling with fresh air to maintain life. Hence it is, that this part of the body is more frequently

ly and powerfully affected by the changes of the air. If therefore the air should be too moist, the fibres of the pulmonary vessels will be weakened, (for such is the effect of all things which moisten, as we have seen in the comment to §. 54. No. 4.) so as to resist less the impelled fluids, and therefore there will be danger lest the relaxed vessels should admit grosser particles of the fluids than can pass through their extremities (see §. 118. and 378). and this more especially happens, when heat is joined to moisture of the air; and thus may be produced the causes of inflammation. But, on the other hand, if the air offends by too great dryness, so as to deprive the internal surface of the wind-pipe and bronchia of it's natural moisture; these parts, being thus rendered less flexible, will be more difficultly expanded or dilated by the inspired air. Moreover, the ultimate small mouths of the exhaling vessels, which open in the surface of the air-vessels of the lungs, will be dried up so as to resist the impulse of the fluids, whence obstruction and inflammation may follow; and this more especially, as by a dry and hot air the most fluid juices are dissipated from the body, whence a greater thickness or tenacity of the blood will arise from the same cause. But too great heat of the air will produce the same effects as the dryness of it; but, if the heat of the air is joined with moisture, it may prove injurious by too much relaxing the pulmonary vessels, as we observed before. But intense coldness of the air is above all causes most apt to produce this disease. For by cold and frost the particles of the blood are concreted together, as we have seen before at §. 117; but, while the blood is drove through the pulmonary

arteries,

arteries, it is almost exposed naked to the air; and therefore there is danger of it's coagulating by the intense cold, more especially when people imprudently expose themselves to breathe in a very cold air, after being heated by exercise or the fire-side, as we are assured from so many fatal instances, as was demonstrated more at large at §. 118. Hence Hippocrates observes^b, that pleurifies and peripneumonies are the most frequent and violent in the winter time. But since we are taught from anatomy^c, that the lungs, being suspended in the open air surrounding them every way, always collapse and become much less than they were while they continued in the intire thorax; it is thence evident, that the lungs always endeavour by their own proper force to contract themselves in every part, and therefore the different weight of the air may increase or diminish the dilatation of the lungs, which is necessary towards the free transmission of the blood through them. In strong and healthy people, the difference commonly observed in the weight of the atmosphere seldom occasions much disorder; but by those who have the muscular fibres and ligaments, connecting the cartilages of the bronchia together, too rigid, or apt to contract with a spasm from slight causes, the alteration in the weight of the air is commonly perceived immediately, and they are often seized with an asthmatic fit. But, since an air too weighty makes a greater pressure upon the vessels of the lungs, it will increase the resistance to the right ventricle of the heart, by diminishing the capacity of the vessels. But, when the air is too light, those vessels being less compressed may be too much

^b De Affectionibus. cap. 3. Charter. Tom. VII. pag. 621.

^c H. Boërhaave Institut. Medic. §. 602.

much dilated by the impelled humours, whence the same effects will ensue as from a moist and hot air. Moreover, an air too light cannot sufficiently overcome the force of the contractile fibres of the lungs which resist their dilatation. Although therefore the different weight of the atmosphere seldom offends much of itself in people who are otherwise in health, yet it may concur together with other causes so as to increase their effect. But it seems that less danger may be expected from an increased weight of the air; for we are taught by experiments, that animals have been able to live in air that has been so compressed, that the mercury in the barometer has been sustained at thirty-nine inches above its usual height^d: but also in the highest mountains the respiration has been observed so much impeded by the overlightness of the air as to endanger suffocation^e.

But, besides the forementioned qualities of the air, it is to be observed that the atmosphere which surrounds us contains in itself an incredible variety of small bodies. For whatever exhales from plants and animals, whether living or dissolved by putrefaction after death, or expelled by the force of fire, all fluctuates in the air. Even fossil or mineral bodies sometimes spontaneously, but more frequently agitated by fire, send forth exhalations, which are likewise diffused through the air. If therefore these exhalations, mixed with the inspired air, are endowed with a caustic, astringent, or coagulating force, a peripneumony may from thence arise. When Tachenius^f endeavoured by repeated sublimations

^d Vide Boyle in Experiment. novor. physico mechan. continuat. secund. artic. 4. Exper. 6, 7, &c. Tom. I. p. 5, &c.

^e Verulam Novi Organi, Lib. II. Aphor. 12. pag. 333.

^f Hippocrat. Chém. cap. 24. pag. 149, 150.

tions to fix arsenic, which is so infamous for its caustic and poisoning fumes, being thirsty with desire to know this success, and despising all danger, opening the vessels, breathed in a most pleasant fume, but half an hour after he paid severely for his imprudence, being seized with a difficulty of breathing, convulsions in all his limbs, discharging blood in his urine with an intolerable burning pain, &c. It is true he recovered this dangerous experiment by the use of milk and oil, yet so that he continued in a languishing condition the whole winter following, afflicted with a slow fever like a hectic. I well remember, that endeavouring to prepare a very strong spirit from sea-salt highly dried and decrepitated, with high-rectified oil of vitriol, upon opening the vessels the most volatile fumes burst forth with so much violence, although there were only a few ounces of this spirit contained in a most capacious receiver, that not only the laboratory, but almost the whole house was immediately filled with those vapours, with imminent danger of suffocation, if I had not suddenly fled. Every one knows, that the fumes of burning sulphur certainly kill both men, and all animals that breathe, if they are drawn in copiously together with the air. For the internal surface of the lungs is so sensible, that this whole organ is immediately shrivelled up by such very acrid fumes drawn in with the air, the muscular fibres connecting the cartilaginous segments of the bronchia being contracted with a convulsive force, whence a suddenly fatal peripneumony ensues; or, if the patient escapes, an incurable asthma remains during life. The truth of this I saw in a worthy member of the city of Leyden, who, in his youth dwelling

dwelling at a vintner's to learn the traffic of a wine-merchant, was advised by his companions to smell at an open vent-hole of a large cask, filled with the fumes of sulphur, by which artifice they preserve wine from fermenting. The unhappy person powerfully breathed in the malignant fumes by his nostrils, but immediately fell down, and after some hours struggling with death recovered, but continued all his life-time asthmatic, and could never sleep but sitting upright in a chair. But also, together with the inspired air, may be drawn into the lungs such things as may do great mischief by their coagulating and drying force, though they are not acrid, and though their bad effects are usually not so suddenly perceived. Thus Diemerbroeck^s, opening the servant of a stonecutter who died of an asthma in the hospital, found in his lungs a large quantity of the dust of stones, filling almost all the vesicles of the lungs; and in the year following he observed the same thing in two other stonecutters, who died of the like disease. From all which it is sufficiently evident, that such things may be taken in with the inspired air as are capable of producing a peripneumony.

Chyle from gross, dry, and viscid aliments, &c.] It is known from physiology, that the chyle prepared from the food and drink taken in is poured into the subclavian vein through the thoracic duct, from whence it passes, the moment after, together with the venal blood, to the right ventricle of the heart, and from thence it is required to be propelled through the ultimate extremities of the pulmonary artery. If therefore the chyle is made from gross and viscid aliments,

or

^s Anatom. Lib. II. cap. 13. pag. 306.

or from the drier kinds of food taken in without drink, and not sufficiently diluted, there is danger lest it should hesitate in the ultimate extremities of those arteries and obstruct them, or at least render the passage of the blood more difficult through the lungs. It is indeed true, that great precaution is used in the fabric of the body to prevent those accidents, since the bile poured into the intestines dissolves the tenacity of what is taken in, and the saliva, with the lymph of the pancreas, stomach, intestines, &c. mix with and dilute the chyle, before it is poured into the venal blood; and likewise the chyle is in a manner drank up by the torrent of the venal blood, only in a small quantity at a time. Yet in the mean time the ropy and viscid particles of the aliments taken in, and thus diluted, may again unite, while contained in the right auricle, venous sinus, and ventricle of the heart (see §. 69, and 70.), whence it may produce a morbid lentor, whose bad effects will be perceived in the lungs. For do not the most healthy people, after taking too large a meal, perceive a difficulty of breathing for some hours following, whilst the chyle passes through the lungs in a larger quantity than usual, and perhaps less elaborated? In the weaker sort of people the same is observed much sooner, and even from a slighter error in diet, more especially and above all, in phthical or consumptive patients, who are troubled with the greatest anguish, while the new chyle prepared from the aliments taken in is mixed with the blood in too large a quantity. It is therefore evident, that this cause of a peripneumony ought to be remarked. This disease frequently occurs in oxen, and seems to be chiefly occasioned in these animals, when they stand without exercise in stalls in
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the winter time, and are fed with linseed cakes left after the expression of the oil, and with which, being ground to powder and mixed with water, is prepared that tough and firm sticking lute, which the chymists commonly use to join their vessels together. But, if an acrimony is also joined with such a viscid lentor, the mischief will be so much the greater, in as much as the tender vessels, being irritated by an acrid stimulus, contract and lessen their capacities. For although from the foods of various kinds one and the same homogeneous humour, the red blood, is prepared by the efficacy of the human body, yet that change is not performed in an instant, but takes up the space of many hours, and the chyle, whilst it flows with the blood, still retains frequently for a long time the nature of the aliments from whence it is prepared. This is evident in women who give suck, and whose milk frequently retains for a long time the smell, taste, purgative force, &c. of what is taken in. What has been said is also confirmed by the testimony of Hippocrates, who says ^h; *inflammationem in pulmone fieri maxime a vinolentia, & piscium capitonum & anguillarum ingluvie: hi namque pinguedinem humanae naturae inimicissimam habent*; ‘ an inflammation in the lungs happens chiefly from
‘ drinking of wine, and a great feeding upon cod-
‘ fish and eels; for these abound with a fat or
‘ oil, very inimical to human nature.’ And therefore Celsus says ⁱ, that the disease being cured, in order to prevent it’s return, *in refectiōe pluribus diebus a vino abstinere*; ‘ the patient should
‘ abstain from wine at his meals for several
‘ ral

^h De Internis Affectionibus, cap. 7. Charter. Tom. VII. pag. 642.

ⁱ Lib. IV. cap. 7. pag. 213.

‘ral days;’ and that at the same time care should be taken ‘to supply the patient for a considerable time only with soft mild food.’

Violent exercise of the lungs, &c.] By violent running, a great many of the muscles of the body being put in action must accelerate the motion of the venal blood, and therefore irritate the heart, so as to make it contract more frequently and strongly, as we proved before upon another occasion in the comment to §. 99. N^o. 2. But the heart contracting more frequently and strongly, in the same space of time, will greatly increase the celerity of the blood, more especially of that drove through the arteries of the lungs. But it was demonstrated at §. 100. that, the motion of the blood being increased through the vessels, by the dissipation of it's watery parts, an inflammatory tenacity is produced in the blood, by which it is strongly disposed to concretion. It was also there proved, that from the same cause the beginnings or mouths of the vessels were enlarged, so as to let the grosser fluids be impelled into the smaller vessels; and from hence it was there concluded, that obstructions, inflammations, &c. might follow from an increased motion of the blood through the vessels. But, although these disorders may follow from hence throughout the whole body, yet the danger threatened is much greater when they invade the lungs, because they are made up of the most tender vessels, and the increase of the blood's velocity affects them more than other parts. For it is demonstrated in our academical lectures upon the theory of physic^k, that all the fluids of the whole body pass once through the lungs alone in the same space of time

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that they are distributed, and perform one circulation through all the other parts; so that, while the whole quantity of all the vital humours passes through the lungs, there is only a certain part transmitted through the other viscera. Hence we understand the reason why men and other animals so frequently die suddenly by the most violent running, as we find recorded by several writers of medical observations. But more especially the most fatal events follow, when people that are hot and out of breath by running expose themselves to breathe the cold air, or to drink largely of cold liquors; the reason of which was given in the comment to §. 118.

By wrestling, straining.] For then almost all the voluntary muscles are in violent action, whence the motion of the venal blood is accelerated almost as much as in running. But moreover we see that all who wrestle or struggle with each other, or by great straining endeavour to raise weights or remove certain obstacles, breathe in a great quantity of air, which they retain a long time before it is expired, and this they continually repeat. But the air retained in the warm lungs becomes rarified, and presses so much the more powerfully upon the pulmonary vessels, as it is expanded by heat: thence it is evident, that the pulmonary vessels must be less capacious, while at the same time the motion of the venal blood is accelerated towards the heart by the action of the muscles, so as to irritate the heart into more violent and frequent contractions; but, since the pulmonary vessels are then compressed or straitened by the rarified air, the blood will more difficultly pass the lungs, and only the more fluid part of it will be able to flow through the lessened extremities of the vessels, while the thickest part will

will be accumulated and occasion obstructions and inflammations.

By singing, calling out.] These are ranked among the causes of a peripneumony for the same reason. For the voice is formed by an expulsion of the air contained in the whole capacity of the lungs, drove out by the powers contracting the thorax; yet so that the air thus drove through the wind-pipe strikes against the ventricles of the larynx, arytenoide cartilages, and rima of the glottis. For, when the rima of the glottis is too much dilated, the air passes out very freely, and produces no sound or voice, as is evident in those who endeavour to yield a graver tone than they are able: But musicians have demonstrated, that the difference of the voice, with respect to acuteness and gravity, depends upon the different aperture of the rima of the glottis, and the increased or diminished celerity with which the air is expelled. When therefore people endeavour to sing the most acute tones, the causes contracting the thorax expel with a great force the air contained in the lungs through a very narrow aperture of the glottis, whence the compressed air violently reacts upon the cavity of the lungs in which it is contained, so as to hinder the free passage of the blood through the lungs. The same is also true in calling out aloud, when the voice always forms a more acute tone, as it is stronger. The appearances observable in those who sing or cry out aloud evidently prove the truth of this: for in such the face always appears red and turgid, the eyes are suffused with blood, the veins of the forehead and neck, swell, &c. all which informs us, that the venal blood is accumulated about the right side of the heart, because

it cannot pass freely through the lungs, as was proved before on another occasion in the comment to §. 807.

By hard riding on horseback against the wind.] Mechanical philosophers demonstrate¹, that bodies moving through a fluid suffer a resistance, which resistance is increased in proportion to the increased velocity of the moving body; and that this arises partly from the cohesion of the fluid matter to be overcome, and partly from the motion which it communicates to the parts of the fluid. If therefore any one rides swiftly upon a horse through the air, since action and reaction are equal, the air will press the lungs so much the more, as the person moves more swiftly through the air. But, if, at the same time, the direction of the air moved by an opposite wind is to be likewise overcome, it is evident enough, that the force pressing the air into the lungs will be very much increased. But, if such a wind is likewise cold, the pulmonary vessels will be so much the more contracted, and thus there will be so much greater danger of the particles of the blood concreting (see §. 117.).

Coagulating poisons, &c.] We are taught by the chymists, when they describe the properties of human blood, or that of other animals, that it is coagulated by the addition of acid spirits from fossils, as vitriol, nitre, sea-salt, &c. obtained by the force of fire, and that the same thing likewise happens from the addition of alcohol vini, allum, vitriol, and many others. It was afterwards tried what the like things would effect when injected into the veins of living animals; of

¹ 's Gravesande Physices Elementa Mathem. Tom. I. pag. 527, &c.

of which kind many experiments are given us by Wepfer ^m and other authors. I have often tried the like experiments upon dogs, and have always observed that they render the blood grumous, which grumes, flowing through the veins from a smaller to a larger capacity, pass to the right ventricle of the heart, and from thence to the lungs, where hesitating and obstructing the vessels, these animals have expired after the greatest anguish, sooner or later, in proportion to the greater or less quantity and strength of the coagulating substances injected by the veins. From such causes therefore may arise a peripneumony suddenly fatal. But in the mean time great precaution is taken by nature to prevent such things, after being swallowed through the mouth, from entering the veins and mixing with the blood, before they have been well diluted, or so changed that they can do no mischief. For the very small mouths of the absorbing veins and lacteal vessels in the first passages are so contracted by acrid substances, that they are denied all entrance, and therefore a peripneumony very seldom arises from this cause. If alcohol, or the like styptics, which very readily coagulate the blood, should be imprudently applied in wounds wherein large veins are divided, such a disorder may be feared as the consequence; as also when atra bilis lodged in the abdominal viscera is by any cause put into motion, and rushing towards the liver, by eating through the small branches of the vena cava, it passes together with the venal blood to the right ventricle of the heart. For, as we shall hereafter declare at §. 1104, the atra bilis

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has

^m Cicut. Aquat. histor. & noxæ. Bachlivius Sylloge experiment. pag. 103, &c.

has sometimes the coagulating force of an acid, and therefore it may produce a suddenly fatal peripneumony.

Violent passions of the mind.] How great a power violent passions or disturbances of the mind have, and in what wonderful manners they may increase, diminish, or disturb the vital motion of the humours through the vessels, has been already declared in the comment to §. 104. When a person is struck with sudden fear, the whole body immediately looks pale, all the vessels being so constricted, that they no longer admit the red blood; soon after sighings, shortness of breath, and oppression about the præcordia attend; which evidently denote, that the blood propelled from the right ventricle of the heart through the lungs meets with a very difficult passage. The blood therefore begins to stagnate in this case, in the large venal receptacles about the heart, and be disposed to concretion; and therefore there is the greatest danger lest this blood drove into the narrow pulmonary arteries should there hesitate without motion. On the contrary, when a person is suddenly heated with anger, the face swells and looks red, the whole body grows hot, the tunica adnata of the eyes is suffused with blood, and the pulse becomes strong and quick; all which signs teach, that the blood is moved very swiftly, and enters into smaller vessels than those in which it is naturally found, and therefore there is danger of an inflammation following from an error of place. But in angry people the breath is short and frequent, and the palpitation of the heart with a sense of anguish proves that the like change takes place in the anterior parts, as is observed in the external parts of the body. But, as this madness may go off in a little time by quarrels,

quarrels, threats, and the like, we often observe violent fits of anger without any great mischief following; but, if we reflect that anger is sometimes obliged to be concealed within the breast, even against the inclination, as frequently happens in courts, it may give birth to the greatest calamities. A very worthy citizen, being scandalised publicly by a certain peer, was obliged to suppress his resentment in silence, as it was not in his power to be revenged; but soon after an asthma ensued, which increased for the space of two years, and at length the patient perished of a dropſyⁿ. If now we likewise consider, that in hysterical women and hypochondrical men affected with violent passions of the mind, there almost instantly follows a very great discharge of a most thin and limpid urine, it will be evident that the blood is deprived of it's diluent vehicle, and is therefore inclined more to concretion.

A quinsy with an oppression at the breast, &c.] For the blood to pass from the right to the left ventricle of the heart after the birth, it is necessary for the lungs to be expanded by the inspired air. Every thing therefore which removes the free ingress of the air into the lungs, or hinders the dilatation of the thorax necessary to inspiration, will cause the blood to begin to hesitate in the ultimate extremities of the pulmonary artery; and, while these causes continue to act, the lungs will be filled with impervious blood, so as to occasion a peripneumony of the worst kind. When therefore the wind-pipe or larynx is rendered less capacious in the kinds of the quinsy before described at §. 801, 802. the circulation of the blood through

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the lungs will become difficult, as we demonstrated in the commentaries to those sections. But in a violent pleurisy, or an inflammation of the diaphragm, the patient cannot dilate the thorax on account of the great severity of the pain, and thus they suffocate themselves; and hence these diseases, if they are of the worst kind, almost constantly turn into a peripneumony, as will be hereafter made evident when we come to treat of these diseases.

S E C T. DCCCXXV.

IF these causes (§. 824.) have produced an inflammation in the lungs, it will have various effects, according to the different seat or parts affected (§. 822.); for the bronchial arteries, producing all the effects of an inflammation (§. 393. to 322.), by compressing the extremities of the pulmonary arteries contiguous to them, may cause an inflammation in those arteries by pressing their sides into contact.

It was said before at §. 822. that we may conceive a peripneumony twofold, according as the inflammation is seated in the extremities either of the bronchial or of the pulmonary arteries. The effects will be therefore various, resulting from the injured functions to which these two arteries are subservient. But, since the bronchial artery is destined to support the life and nourishment of the substance of the lungs themselves, therefore an injury of the functions of this artery will properly relate to the lungs themselves as a private part of the body. But an inflammation of
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the pulmonary artery not only injures the lungs themselves, but likewise disturbs the free passage of the blood from the right to the left ventricle of the heart, upon which life depends. But, since the branches of the bronchial artery dispersed through the substance of the lungs are almost every-where contiguous with the branches of the pulmonary artery, it is evident enough, as we said before at §. 823, that an inflammation of the bronchial artery must produce the like disorder in the pulmonary artery, for which reason a peripneumony is always dangerous.

S E C T. DCCCXVI.

BUT, when the blood stagnates in the inflamed extremities of the pulmonary artery itself, that vessel is distended, the most fluid parts of the blood are expressed as it were by a transudation, while the grosser parts are accumulated, and almost all the blood, yet capable of circulating, is collected betwixt the right ventricle and extremities of the pulmonary arteries; the left ventricle of the heart is in the mean time destitute of blood, great weakness follows, the pulse is small, soft, and every way unequal; the respiration is small, frequent, difficult, hot, performed with the body raised, and attended with a cough; the venal blood stagnates before the right auricle and ventricle of the heart, whence an unusual redness of the face, eyes, mouth, fauces, tongue, and lips; and at length death follows

follows by suffocation with inexpressible anguish and a delirium.

In this section are considered those effects which necessarily follow from an inflammation seated in the pulmonary artery, and from the knowledge of which may be formed a diagnosis of a present peripneumony.

It is evident from the definition of an inflammation at §. 371, that the blood stagnates in the inflamed arteries, and that the blood more powerfully moved by the fever urges against the obstructed parts. But from thence follows of necessity a distention of the inflamed vessels before that part where the obstructing matter is lodged; and this was proved in the comment to §. 382. No. 1. But since the red particles of the blood, unless they change their spherical figure by a violent and long continued pressure, leave interstices betwixt them, therefore the thinner parts of the blood will be expressed by transudation through those interstices, and pass on to the left ventricle of the heart. But, since inflamed vessels by swelling and increasing their bulk compress those that are adjacent, the inflammation will soon be spread, and only the thinner parts of the blood will be able to pass through the lungs to the left ventricle, while the grosser parts will be accumulated in the obstructed and distended vessels.

But the increased bulk of the inflamed vessels does not seem to be the sole cause from whence a phlegmon formed in the lungs spreads so suddenly into adjacent parts. But the increased celerity of the blood's motion through the as yet remaining pervious vessels conduces greatly to the same effect, as we explained it before in the comment to §. 382. No. 8. But it was there said, that a considerable
increase

increase of the velocity could not arise from a diminution of the number of the pervious vessels, unless the inflamed part is of such a magnitude, that the number of the obstructed vessels bears a considerable difference in their proportion, with respect to those which remain open. Hence it was there concluded, that in most people inflamed parts could not much accelerate the pulse from this cause, but that this quickness of the pulse rather proceeded from an irritation of the nervous fibres dispersed through the inflamed vessels and adjacent parts. But, when an inflammation is seated in the lungs, it is easily understood that some vessels being obstructed must occasion a great increase in the celerity of the humours through those vessels which remain pervious, namely, because (as we said in the comment to §. 824.) all the fluids of the whole body must all of them make one circulation through the lungs in the same space of time that they are distributed through, and complete their circuit through all the other parts. But in what manner obstruction and inflammation may arise by an increased velocity of the circulation was explained in the comment to §. 100.

It is therefore evident in a peripneumony, that the disorder every moment increases if it is not speedily dispersed, that the impervious blood is accumulated in the obstructed and dilated vessels, and is there continually urged more and more into the narrower extremities of the converging vessels; and thus at length all the blood, as yet capable of circulating and passing through into the pulmonary veins, will stagnate in the larger veins about the heart, in the venous sinus and right auricle, while the impediments are every moment increasing in the lungs. At the same time it is also evident, that, the thick part of the blood being accumulated
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in the lungs, those parts which still continue to move through the vessels will be more than usually thin and fluid ; and this is a phænomenon that has puzzled most Physicians not attending to this matter, since they believe that in every acute inflammatory disease the blood drawn from a vein ought to be of a contrary disposition. Since therefore all the blood, which still continues to circulate through the vessels, consists only of the thinner parts ; therefore the watery drinks taken in cannot remain long mixed with the humours, but are immediately discharged either by sweats or urine. For, other things being alike, the secretion and excretion made by these outlets are so much the larger, as there is a greater quantity of water present in the blood, in proportion to the other parts of the blood itself. Hence Hippocrates ° justly pronounces *malam esse urinam, quæ cito post potum mingitur, præsertim in pleuriticis & peripneumonicis* : ‘ that the urine is bad which is discharged immediately after drinking, especially in pleuritic and peripneumoic patients.’

But the more the lungs are filled with thick and impervious blood, so much the less space is there left for the inspired air ; and hence the lungs in their own nature light and spongy become heavy and compact, resembling a mass of flesh, and appearing of a livid colour from the same cause. Hippocrates seems to have observed the same thing, though he gives a different reason for it, not being acquainted with the circulation of blood. For his words are, *Quum e capite per bronchum & arterias in pulmonem fluxio facta fuerit, natura sua rarus & siccus existens pulmo, quidquid humoris potest, in se trahit, & ubi influxerit, major redditur, & siquidem*

° In Coacis Prænot. No. 579. Charter. Tom. VIII. pag. 886.

siquidem in totum fluxerit, lobi majores reddit utrumque latus attingunt, & peripneumoniam faciunt:
 ‘ When a fluxion shall happen from the head
 ‘ through the air-vessels and blood-vessels into the
 ‘ lungs, that part, which is of it’s own nature dry
 ‘ and spongy, draws into itself all the juices with-
 ‘ in it’s reach, by the influxion of which it is en-
 ‘ larged, and, if the disorder happens throughout
 ‘ the whole viscus, the lobes thereof rendered
 ‘ larger come into contact with each side of the
 ‘ thorax, and produce a peripneumony ^p. And,
 in another place, ^q, treating of the same disease, he
 says, *Hic tumor potissimum a sanguine ortum ducit,*
quum pulmo in se sanguinem attraxerit, & acceptum
retinuerit: ‘ This tumor or swelling derives it’s
 ‘ origin chiefly from blood, since the lungs draw
 ‘ the blood into them, and retain it when re-
 ‘ ceived.’

But the observations, made upon dead bodies
 deceased of this disorder, confirm what has been
 already advanced concerning a peripneumony.
 But it may suffice for us to relate one instance: Up-
 on opening the body of a young man, aged twen-
 ty-six years, deceased of a peripneumony on the
 seventh day of the disease, the lungs appeared very
 much distended and hard to the touch. They fill-
 ed the whole cavity of the thorax, and so firmly
 adhered to the diaphragm, ribs, and vertebrae of
 the back on each side, that they could very difficult-
 ly be separated by the knife. Upon taking the lungs
 out of the thorax, they resembled a mass of flesh,
 their vesicles being filled with a kind of thick, red,
 fleshy substance, and upon dividing them a small
 quantity of putrid bloody ichor flowed out. These
 lungs

^p Hippocrat. Lib de locis in homine cap. 7. Charter.
 Tom. VII. pag. 265.

De Internis Affectionibus, cap. 8. ibidem pag. 643.

lungs being placed in a pair of scales weighed five pounds, and being thrown into the water they sunk. In the wind-pipe was found a frothy and tough matter. In the pulmonary vessels, as also in the heart and it's auricles, were found polypous concretions, which altogether weighed upwards of two ounces^r. This just observation fairly shews in what manner this disease tends to the death or destruction of the patient.

But, since the venal blood brought to the right ventricle cannot freely pass through the lungs stuffed up, it will stagnate in the distended vessels of the lungs, or else be accumulated in the right ventricle, auricle, and venous sinus, or in the larger venal trunks at the same time, and only a small quantity will be able to pass through the yet pervious vessels of the lungs into the left ventricle, which will be therefore destitute of blood. The blood therefore cannot be propelled in a due quantity through the branches of the aorta to the encephalon, whence there will not be made a due secretion of the spirits, and at the same time there will be a deficiency of the influx and pressure of the nervous fluid into the muscles, whence great weakness will follow, as we demonstrated more at large under the head of weakness in fevers. But, since the dilatation of the arteries proceeds from the blood impelled by the heart, it is evident that the left ventricle receiving scarce any blood cannot greatly distend the aorta, and it's branches, whence the pulse must be both small and soft. Moreover, as the increased resistance in the pulmonary vessels, when the disease is adult, will not permit the right ventricle of the heart to intirely empty itself, therefore

^r Fred. Hofm. Medic. ration. & system. Tom. IV. Sect. II. cap. 6. Observ. 1. pag. 438, 439. uti & in Dissert. dec. 2. Dissert. X. de Generatione Mortis in morbis, pag. 528.

therefore it will often palpitate, and at each contraction propel some blood through the lungs into the left ventricle, 'till that cavity has collected blood enough to irritate it into a violent contraction, from whence there will be sometimes perceived one or two violent pulsations, after which the pulse will become again soft, small, and will even frequently intermit; hence therefore the reason is evident why the pulse is every moment unequal. But such an instability of the pulse always attends in dying people, and we shall hereafter prove at §. 874, that a peripneumony is the proximate cause of death, and the ultimate effect almost of all fatal diseases.

From what has been said, perhaps the reason is evident why Galen * pronounces, that the pulse of peripneumonic patients is large, namely, because such a violent pulsation of the artery is sometimes observed, soon after becoming weak and trembling again. For that Galen does not absolutely make the pulse large in this disease is evident from what he adds immediately after; for he says, *Peripneumonicorum autem magnus est (pulsus) & undosi quid habens, & obscurus, & mollis, similiter ac pulsus lethargicorum, nisi quatenus præpolleat inæqualitate, &c.* ' But the pulse of peripneumonic patients is ' large, but is something knotty or unequal, ob- ' scure and soft, resembling the pulse of those ' who are lethargic, only, in the first case, the ' inequality is greater, &c.' Something of the like kind we read also in Aretaeus †, who in treating of this disease says, *Pulsus habent in initio magnos, inanes, creberrimos*: ' They have in the beginning ' of the disease the pulse large, empty, and very ' quick'.

* De Pulsibus ad Tyrones, cap. 12. Charter. Tom. VIII. pag. 10, 11.

† De causis & signis morbor. acut. Lib. II. cap. 1. pag. 11.

‘ quick.’ And afterwards he adds, *Pulsus parvi, frequentissimi & deficientes, quando ipsis mors proxima est*; ‘ when the disease is near death itself, the pulse is small, very frequent, and intermitting or deficient.’

The respiration is small, frequent, and difficult, &c.] For, that the blood may pass through the lungs after the birth, it is necessary for them to be expanded with the inspired air. But from what has been said it is evident that in this disease the arteries of the lungs are distended with impervious blood there collected, and that therefore the air-vessels of the lungs are diminished, and, at the same time, the easy expansion of them by the inspired air is hindered, since they are no longer soft and spongy, but become hard and like flesh. Hence such patients are liable to inspire but a small quantity of air at a time, which they endeavour to compensate, by breathing more frequently and with the greatest efforts. At the same time there also attends an orthopnoea, as it is called by Physicians, in which the patient is led by his own instinct to raise up his body in the bed, in order to breathe the air more easily. For in an erect posture of body the abdominal viscera by their own weight draw down the diaphragm, and by that means increase the dilatation of the thorax. This has been remarked by Aretaeus^u, observing *sedere volunt laborantes: ad spiritum ducendum corpus rectum statuitur; ad id enim hic situs aptissimus est*; ‘ that those, who are ill with a difficulty of breathing, chuse to sit up; for an upright posture of the body is the best adapted for breathing in the air.’ Such an erect respiration therefore always denotes an impediment in the lungs, obstructing the free passage

^u Ibid. p. 10, 11.

sage of the blood; and from hence the reason is evident why Hippocrates ^x says, *Quod si in morbi vigore aegrotus velit residere, hoc in omnibus quidem acutis morbis malum est, pessimum vero est in peripneumonicis*; 'that, if in the height of a disorder the patient chuses to sit up, this is indeed a bad sign in all acute diseases, but is the worst of all in peripneumonies.' For when diseases are declining it is not at all a bad sign for the patients to be desirous of sitting up in the bed; for then, their strength increasing and the disease declining, they begin to be tired out with continual lying. But in the height of a disease it always denotes a troublesome anguish, from the difficult passage of the blood through the lungs.

But, because in this disease the air-vessels of the lungs are compressed by the distended blood-vessels, therefore the sides of the vesicles in which the bronchia terminate rub against each other; whence follows an almost continual and irritating slight cough, which is increased when the mucus naturally lining the internal surface of the lungs, being thickened by heat and stagnation, cannot be easily abraded and expelled by the air impeded in respiration, whence it is accumulated in these parts, as appears from opening the body of the person deceased of a peripneumony lately mentioned. Generally there is also at the same time a disagreeable rattling in the breast, which arises from the collision of the air against the mucus here collected, or else from the dried vesicles of the lungs rattling like dry parchment, when they are expanded by inspiration. Hippocrates seems to point out something of this kind in treating of an adhesion of the lungs to the side, where he enumerates such symptoms as very well

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^x In Prognosticis Sentent. 20. Charter. Tom. VIII. p. 603.

agree to a peripneumony, and afterwards adds, *Sanguis velut corium stridet, & respirationem prohibet*; ^y 'that the blood rattles like leather or parchment, and obstructs the respiration.' But in Foësius this text is read after another manner, the breast being said to rattle instead of the blood. And that this amendment of the text is not made without reason appears from another passage of Hippocrates ^z, in which we read as follows: *Quum pulmo ex calore plenus intumuerit, vehemens & dura tussis detinet, & orthopnoea; confertim respirat, crebro anhelat, tumescit, nares expandit, ut equus ex cursu, & linguam frequentur exserit, & pectus ei modulari videtur, & gravitas inesse*: 'When the lungs are quite swelled up with an inflammation, the patient is afflicted with a violent and hard cough, and an orthopnoea; he breathes thick, frequently pants, swells his thorax, and expands his nostrils like a horse upon the course, frequently puts out his tongue, and seems with difficulty to govern or rule his thorax.'

But the breath is hot in peripneumonic patients, as those plainly perceive who have the care of people under this disease. It was observed before at §. 739, that sometimes in an ardent fever there is so great a heat about the vital viscera, that the air itself expired seems to be scalding: but it was also observed at §. 741, that an ardent fever often turns into a peripneumony. But there are many causes concurring in a peripneumony to render the inspired air very hot. For here the lungs are stuffed up with the thickest or red part of the blood, which we know

^y De Morbis, Lib. II. cap. 23. Charter. Tom. VII. p. 275

^z De Morbis, Lib. III. cap. 7. Ibid. p. 585.

know to be most disposed to produce heat, and to retain it a long time when produced; through the vessels of the lungs not yet impervious, but lessened by the adjacent obstructed and distended vessels, the humours are very swiftly transmitted, whence a greater heat must arise, as we demonstrated in the comment to §. 382. N^o. 6. and in the history of heat in fevers. Add to this, that the lungs distended with impervious blood cannot be sufficiently expanded, and therefore can take in but a small quantity of the cool air at each inspiration. From all which together we may understand the reason, why the expired air is perceived extremely hot in peripneumonic patients.

Hence Hippocrates ^a ranks a quick and hot breath among the effects of this disease: as does Galen ^b likewise in several places; and the like is also remarked by Aretaeus ^c.

A stagnation of the venal blood about the right auricle and ventricle of the heart, &c.] But, since the right ventricle of the heart cannot freely empty itself through the vessels of the lungs obstructed and inflamed, therefore the venal blood returning from all parts of the body will begin to stagnate in the large venal receptacles about the right side of the heart; and therefore, while the arteries continue to send forward the blood, which cannot return through the veins, thus all parts of the head both external and internal will be distended with blood, from whence the redness of the face, eyes, &c. are intelligible.

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See

^a De Morbis, Lib. III. cap. 14. Charter. Tom. VIII. p. 588.

^b De Praesagitione ex pulsibus, Lib. IV. cap. 2 Charter. Tom. VIII. p. 297. De locis affectis, Lib. II. cap. 5. Charter. Tom. VII. p. 419. & Lib. IV. cap. 11. Ibid. p. 475.

^c De caus. & sign. Morbor. acutor. Lib. II. cap. 1. p. 10, 11.

See what has been said upon this subject in the comment to §. 807. where a reason was likewise given why this redness, &c. rather appear in these parts than in others. Hippocrates^d ranks a redness of the face among the signs of a peripneumony; and the like is also declared by the other Greek Physicians of the Antients, when they describe this disease. Thus Trallian^e reckons a redness of the cheeks among the diagnostic signs of a peripneumony. Aretaeus says^f, that the face, but especially the cheeks, look red, and the veins of the neck and temples are swelled: but to this he adds another appearance, namely, *oculorum album nitidissimum & pingue est*, ‘that the white of the eyes is very splendid and greasy.’ For it seems the translator here reads the word *λαμπρότατα*, splendid, as if the eyes were very clear and shining in this disease, as bodies usually are when they are anointed with oil. But since the return of the venal blood from the head, being obstructed, swells all the vessels, the eyes themselves are protuberant, and the white part of them commonly looks red, so that the patient rather expresses a fierce countenance (see §. 773. N°. 4.) And this opinion is favoured by the proper signification of the word *λαμυρότατα*, for *λαμυρός* is usually said of a fierce or bold man, more than usually audacious. It is also an ingenious conjecture in the Oxford edition^g of this author, which directs the reading to be *λαπυρότατα*, which will then signify the eyes to be very moist; for in the worst diseases the eyes often appear watered

^d De internis affection. cap. 8. Charter. Tom. VII. p. 643.

^e Lib. V. cap. 2. p. 241.

^f Lib. II. de causis & signis Morbor. acutor. cap. 1. p. 11.

^g In conjecturis de suspectis aliquot Aretaei locis ibid. p. 361.

tered with involuntary tears. But, if we consider what has been said in the comment to §. 734. concerning what is to be observed in the patient's eyes, it will appear very probable, that, by the term greasy, Aretaeus understands the thin and white pellicle, which so often deforms the eyes of patients in fatal diseases. All this seems to be fairly confirmed by what we read in Aëgineta^h, where he treats of a peripneumony: for, says he, *Genae itaque in his rubrae apparent, & oculi intumescunt, supercilia deorsum nutant, & corneae subpingues apparent*; 'the cheeks therefore appear red in this disease, the eyes swell, the eye-brows frown downwards, and the corneae, or horny coats of the eyes, are here in a manner greasy'; namely, when they are obscured by such a pellicle.

At length death ensues, with suffocation, inexpressible anguish, and a delirium.] Namely, when the lungs are so far stuffed up with impervious blood, that they cannot admit the inspired air, and when so great a resistance arises against the right ventricle, that it can no longer propel the blood, whence the heart ceases to move, and death ensues. But how great anguish the unhappy patient first suffers may be concluded from what has been said before at §. 631. But why such patients are delirious was explained in the comment to §. 807. See likewise what has been said upon this subject at §. 774. where it was demonstrated, that a fatal phrenzy follows a peripneumony. But it sometimes happens, that a little before death the patient no longer perceives the anguish, but the extremities being cold, the nails livid, the pulse small, very quick, and intermitting, sufficiently demonstrate to a skilful Physician

246 Of a true Peripneumony. Sect. 826, 827.
cian that death is at hand, as Aretaeusⁱ well observes.

But when, why, and with what symptoms, this disease terminates in death, will be explained hereafter more at large, at §. 848.

S E C T. DCCCXXVII.

IF such a disorder (§. 826.) invades both lobes of the lungs at the same time, and to a violent degree, inevitable and speedy death will follow, since nature cannot be relieved nor assisted by any antiphlogistic medicine.

For the continuance of life it is necessary for the blood to be able to pass through the lungs from the right to the left side of the heart; when therefore both lobes of the lungs are at the same time invaded with a violent inflammation in the extremities of the pulmonary artery, this passage through the lungs will be intercepted, and consequently life soon extinguished. And although in the beginning of this disease, when most of the vessels are obstructed, some still remain pervious, yet it is evident enough from what has been said before, that these last will be every moment more and more compressed by the swelling of the adjacent inflamed vessels, until at length all passage through them is intercepted. For all the blood, as yet capable of passing through the lungs to the left ventricle, being propelled through the branches of the aorta into the veins, will return again to the right ventricle, and at length the pulmonary artery, being in many places stuffed up with imper-

impervious blood, will afford a passage only to the thinner parts, whilst the more gross, namely, the red, part of the blood is stopped by the obstructions, whence the obstructing matter will be every moment increasing, whence it plainly appears that inevitable and speedy death may be expected.

Nor can much be hoped for from the best medicines however copiously and speedily applied, as will be evident from considering what follows. The only method of curing an inflammation, that can be here desired, is that by resolution; for a suppuration, when both lobes of the lungs are violently inflamed at the same time, cannot take place, since all the symptoms increase when an inflammation turns to suppuration (see §. 387.) and therefore the patient would be suffocated before so great an abscess on each side of the lungs could be brought to maturity. Much less can the patient be preserved when a gangrene follows after a violent inflammation in each side of the lungs, of the truth of which no one doubts. But, that a resolution of the inflammation may be obtained, it is necessary among other circumstances for the obstructing cause not to be over stubborn or compact, (see §. 386.) and but of small extent in the sanguiferous arteries, or in the beginnings of the lymphatics, the canals being yet moveable and capable of transmitting a diluent vehicle, &c. But in a violent peripneumony the reverse of all these takes place; for, since every moment of life the blood ought to pass from the cavity of the right ventricle through the pulmonary artery, the obstructing matter will be rendered more compact by each impulse of the heart, the most fluids parts thereof being pressed through the ultimate extremities of the pulmonary artery; and from the same cause the obstructing

particles will be urged into the narrower extremities of the converging vessels, and therefore the obstructed vessels, being extremely distended, will be deprived of their ability to move. But at the same time there is the greatest difficulty of conveying a diluent vehicle; for all watery liquors, whether drank or applied in the form of bath, vapours, clyster, &c. are received into the veins, and therefore pass to the right ventricle; but this is not able to mix therewith the impervious blood, when a great part of the obstructed vessels are stuffed up with blood; such liquors will therefore pass through the yet pervious vessels into the left ventricle, so as to sustain life though in a very weak state in this bad disease. But if it be considered, that by the same means is increased the quantity of fluids to be passed through the lungs, it will appear likewise that the celerity of their motion must be also increased, since the fluid propelled from the right ventricle of the heart must move in the same space of time through the small number of vessels which yet remain open, the majority of them being obstructed, whence again will arise another obstacle to a mild resolution, as that requires a sedate motion of the humours, which we demonstrated at §. 386.

If now we consider the four curative indications necessary to obtain the resolution of an inflammation enumerated at §. 395. and explained more at large in the sections following, it will be evident that this method of cure is here impracticable. For the very tender small vessels of the lungs will have their injury increased every moment, while the heart continues to urge against the obstructions so long as life remains; and since the impetus of the fluid, expelled from the heart, acts directly upon the obstructed vessels which are so very near.

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How difficult it is to restore the obstructing matter to a state of fluidity, in this disease, by a diluent vehicle, we shall just now see. Copious bleeding, which is the most efficacious remedy for inflammatory diseases, while it lessens the quantity and impulse of the vital fluid, it by that means restores the vessels to their elastic vibrations, and by the same means affords the inflamed vessels an opportunity to repel back the obstructing particles from the narrow parts of the converging vessels into the larger branches ; even this grand remedy in the present case can be of little service. For thus that blood is taken away, which, being as yet able to pass through the lungs, supports life, and, how much soever the quantity of the blood is lessened, all that remains must notwithstanding pass through the lungs ; hence neither can revulsion here take place, which is of so great use in the cure of other inflammations, nor can a repulsion of the inflammatory matter from the narrow parts of the obstructed vessels into the larger trunks be expected by this means (see §. 400.) for this is hindered from the fulness of the pulmonary arteries, when both of the lungs are violently inflamed at the same time, and the valves of the heart hinder the return of the blood contained in the trunk of the pulmonary artery. But a relaxation of the vessels by a vaporous bath, from whence much good may be expected in this disease while it is curable, can hardly succeed in the present case, in which the patient is usually so much oppressed with anguish that they cannot bear linnen cloths moistened with hot water, and applied to the mouth and nostrils. It is therefore evident, that speedy and inevitable death is at hand, when both lobes of the lungs are violently inflamed at the same time, the disorder being seated in the branches of the pulmonary artery.

S E C T

S E C T. DCCCXXVIII.

BUT if the disorder invades only a small part of one lobe of the lungs, and the causes are not violent, there are some hopes, though one cannot be certain that it may be well cured.

Anatomical injections inform us, that the branches of the pulmonary artery dispersed through the lungs communicate with each other, and are joined together by many anastomoses in several parts, and that the same is also true of the bronchial artery; moreover that the branches of the bronchial artery are united in several places with the branches of the pulmonary artery, as was said before at §. 823. Hence, if there is but a small part only inflamed in either lobe of the lungs, there will not be immediately so much danger, since the blood, incapable of passing through the obstructed vessels, may commodiously enough be transmitted through the adjacent pervious vessels. Nor in this case can the number of the obstructed vessels, compared with those which remain yet pervious, produce so great a difference, as to require a considerable increase of the velocity, to continue the passage of the blood from the right side of the heart through the lungs into the left. It is therefore evident, in this case, that there are hopes of a cure remaining, though they are not certain, since an inflammation seated in a small part of the lungs may be so easily spread to the adjacent parts, as we said at §. 825.

S E C T.

S E C T. DCCCXXIX.

FROM hence (§. 824. to 829.) diagnostic and prognostic signs may however be derived; more especially if we consider, that the termination of a peripneumony is like that of an inflammation (§. 386 to 393.); whence also it has various stages, differing according to the time of it's duration, so that it may end either in health, another disease, or in death.

It is now asked, by what signs this disease may be known when present, and distinguished from other diseases of the breast. The preceding causes, enumerated at §. 824, and the observable effects described at §. 826, easily remove all doubt in this respect. The fever which precedes and accompanies a peripneumony readily distinguishes it from a convulsive asthma, with which disease it has many signs in common. Hence Galen^k seems to have described a just diagnosis of this disease in the following words: *Quum vero spirandi difficultati cum angustia & gravitate febris acuta simul accedit, est ille affectus inflammatio pulmonis*: ‘ But
 ‘ when a difficulty of breathing with anguish and
 ‘ oppression or sense of heaviness are at the same
 ‘ time joined with an acute fever, that disorder
 ‘ is an inflammation of the lungs.’ But in the progress of the disease, when the blood is hardly any longer capable of being transmitted through the lungs, the pulse is often so small and soft, that it may easily deceive the unwary: there is also generally a suffocating cough at the same time, with a redness of the face and eyes, and the symptoms
 before

^k De locis affectis, Lib. IV. cap. 11. pag. 475.

before enumerated at §. 826. But among the effects of an inflammation described at §. 382. we reckoned a pricking pain, when the fibres of the distended vessels are threatened with a rupture; but nevertheless such an acute pain does not seem always to attend this disease. Hence Celsus¹ pronounces of a peripneumony, *Id genus morbi plus periculi quam doloris habet*: ‘That it is a disease which has more danger than pain.’ We know that the internal surface of the lungs contiguous to the inspired air is extremely sensible, since an almost suffocating cough is produced when any foreign body slips into the wind-pipe; and, this internal surface of the lungs being irritated in catarrhs, the patient frequently perceives a most troublesome pain. But, the substance of the lungs themselves being inflamed, there is rather perceived an oppressing weight and anguish, than a sense of pain. Are not the lungs intirely consumed by purulent matter without much pain in consumptive patients? But in the mean time some difference may here take place, according to the variety of the part affected in the lungs themselves. For, if an inflammatory tumor which is not very large elevates and distends by it’s bulk the internal membrane of the lungs, which is contiguous to the inspired air, a troublesome pain may then be seated in that part. But, when a greater part of the lungs is inflamed, the patient is rendered stupid and insensible of the pain, because the blood, being denied a passage through the lungs, hinders the return of the venal blood from the encephalon. But when the lungs adhere in some place to the pleura, as is frequently observed in opening dead bodies, in that case the pleura may be distracted by the inflamed lungs, and thus an acute pain will be perceived

at

¹ Lib. IV. cap. 7. pag. 212.

at the same time in the breast. Thus also, when the lungs being distended, and increased in their bulk by their impervious blood, press upon and stretch the mediastinum, a pain may ensue, which Hippocrates^m seems to have observed, where he describes a peripneumony under the title of a distension of the lungs: for his words are, *Tussis detinet, orthopnoea & anhelatio, &c. dolor acutus pectus & scapulas occupat*: ‘The patient is invaded with a cough, shortness or difficulty of breathing, and an orthopnoea, &c. an acute pain occupies the breast and shoulder-blades.’ And in another placeⁿ, treating of an erysipelas of the lungs, he says, *Quum autem traxerit, febris acuta ex ipso oritur, & tussis sicca, plenitudo in pectore, & dolor acutus in anterioribus & posterioribus partibus, præcipue vero ad spinam*: ‘That they draw blood into themselves, concerning which, we spoke before at §. 826. and then he adds as follows, but when the blood is drawn into them an acute fever follows from thence, with a dry cough, a sense of fulness in the breast, and an acute pain in the anterior and back parts of the thorax, but more especially at the spine.’ And a little after^o, treating of a suppurative tubercle in the lungs, he says, *Quamdiu quidem crudum adhuc fuerit, dolorem tenuem exhibet, & tussim siccam; postquam vero maturuerit, anteriore & posteriore parte acutus dolor oritur*: ‘That indeed, so long as it remains crude, it affords a slight pain and a dry cough; but that, after it has come to maturation, an acute pain arises in the anterior and back part.’ For when an ab-

fcess

^m De Morbis, Lib. II. cap. 23. Charter. Tom. VII. pag. 574, 575.

ⁿ De Morbis. Lib. I. cap. 8. ibid. pag. 540.

^o Ibidem.

scels has arrived to maturity, and is ready to break, it is the most turgid, and therefore distracts by it's bulk the adjacent parts. Now when a pleurisy follows a peripneumony, or when the lungs are also inflamed together with the parts betwixt the ribs, which disease Physicians usually denominate pleuroperipneumonia, there is an acute pain attends, but then this does not arise from inflammation itself of the lungs, as is evident enough.

We may therefore conclude, that an acute pain does not essentially belong to the nature of this disease, as it is frequently absent; but that the sense of a pressing weight, and great anguish, are more constant attendants of this disease, sometimes joined with a dull pain not very violent. This opinion is supported by what is observed in those who lie ill of this disease, as well as by the testimonies of the antient Physicians. Thus Aretaeus^p, describing a peripneumony, says *Morbus ille, quem peripneumoniam vocamus, est inflammatio pulmonis cum febre acuta, quibus simul adest thoracis gravitas, doloris absentia si solus pulmo inflammatur, quippe qui naturaliter doloris immunis sit, &c. At si quæpiam ex membranis illum ambientibus, & ad thoracem deligantibus, inflammatur, adest simul & dolor*: ‘ The disease which we call a peripneumony is an inflammation of the lungs with
‘ an acute fever, to which is added at the same
‘ time an oppression at the thorax and an absence of pain, if the lungs only are inflamed,
‘ as they are naturally not the subject of pain,
‘ &c. But if any of the membranes, encompassing the lungs, and tying them to the
‘ thorax, are inflamed, then also a pain attends

^p De causis & signis Morbor. acut. Lib. II. cap. 1. pag. 10.

‘ tends at the same time.’ Thus also Trallian^a and Aegineta^r make no mention of pain when they describe this disease, but observe, that the patient perceives a heaviness and tension in the thorax. But Aetius^s has the following words: *Peripneumonia inflammatio est pulmonis cum febre acuta. Consequitur autem affectos thoracis gravitas absque dolore. Quod si pelliculae ipsius, quae cum thorace secundum longitudinem ipsius sunt connexae, sint inflammatae, etiam dolorem percipiunt:* ‘ A peripneumony is an inflammation of the lungs with an acute fever. But it follows after disorders of the thorax with a heaviness and without pain. But if the membranes of the lungs, which connect them to the thorax longitudinally, are inflamed, then also a pain is perceived.’ And Caelius Aurelianus^t, briefly reckoning up the signs of this disease says, *Sunt haec, febres acutae, spirationis celeritas ac difficultas, tussicula, atque sputorum varia emissio, gravatio sine ullo dolore, aut cum parvo, praefocationis sensus:* ‘ These are acute fevers, attended with a difficult and quick respiration, slight cough, and a discharge of various kinds by spitting, a sense of heaviness without any pain, or with a small pain, and a sense of suffocation.’

But whether or no the inflammation is seated only in one lobe of the lungs, or in both, will appear from the attention and heaviness perceived either on one or both sides of the thorax. But the magnitude or violence of the symptoms will point out the various extent and intensity of the inflammation. In this case Hippocrates^u gives us the following

^a Lib. V. cap. 1. pag. 241.

^r Lib. III. cap. 30. pag. 40.

^s Tetrabil. 2. Serm. 4. cap. 66. pag. 518.

^t Acutor Morbor. Lib. 2. cap. 27. pag. 139.

^u Coac. Praenot. N^o. 400. Charter. Tom. VIII. pag. 875.

lowing diagnostic signs: *Peripneumonicis, quibus tota lingua alba & aspera fit, ambae pulmonis partes inflammatae sunt, quibus vero dimidium, una juxta quam apparet. Et quibus ad claviculam dolor fit, his superna pulmonis ala una aegrotat; quibus autem ad ambas claviculas dolor fit, ambae supernae pulmonis alae aegrotant, quibus juxta mediam costam, media; quibus vero ad diaphragma, inferna; at totam unam partem dolentibus, omnia juxta hanc partem aegrotant:*

‘ In peripneumonic patients, who have their
 ‘ whole tongue white and rough, both sides of the
 ‘ lungs are inflamed; but, when only half the
 ‘ tongue has this appearance, one half of the
 ‘ lungs, of the same side is inflamed. Also in
 ‘ those who have a pain in the clavicle the upper
 ‘ part of the lungs on one side is disordered; but
 ‘ in those who have a pain at both clavicles the
 ‘ upper parts of the lungs on each side are diseased,
 ‘ and their middle part, when the pain is about the
 ‘ middle of the ribs; but their lower part in those
 ‘ who have a pain about the diaphragm; but, one
 ‘ whole side being painful, all that half of the
 ‘ lungs is inflamed or diseased.’

But from what has been said at §. 827, 828. it is evident, that the prognosis is always dangerous in this disease, and sometimes denotes sudden and inevitable death. But the rest appertaining to the prognosis of this disease, so far as they relate to the several changes of it, may be better described, when we shall hereafter consider each of them particularly in the sections following. For, in this place, to collect together all the prognostic rules would be repugnant to the order or method of our doctrine. For, since a peripneumony is an inflammation of the lungs, all the events of an inflammation may follow, and according to the difference and continuance of those events, &c. the
 prognosis

prognosis will greatly vary. We shall hereafter at §. 847. have still occasion to speak more concerning the prognosis of this disease.

But since a peripneumony, or any other disease, can have only three ways of terminating, namely, either in health, death, or another disease, it will be a matter of consequence for us to see in what manner and by what means, together with what appearances, this disorder tends to either of these ways of terminating; for, from these being known by a faithful observation, we may establish the curative indications, by which we are to promote and aid those salutary endeavours of nature, by which the disease may happily terminate in health; and on the contrary that we may avoid or turn off those effects, as much as lies in the power of art as at this day known, which appear when a peripneumony tends to death; and that we may endeavour to direct the metastasis or removal of the morbid matter to parts less dangerous, by which metastasis the peripneumony ends in another disease.

S E C T. DCCCXXX.

THIS inflammation of the lungs is cured, 1. by a mild resolution, when the patient is of a lax habit, the humours of a mild disposition, their viscosity not great, and the part of the bronchial or pulmonary artery affected not large. 2. By a speedy, free, and copious yellow spitting, mixed with a little blood, of a consistence sufficiently thick, the pain abating, and the respiration being eased by it, the pulse becoming

coming larger and fuller, and the spitting soon changing to a white and mild kind; this more especially happens if the bronchial artery is the seat of the disorder, or only a small part of the pulmonary artery. 3. By a bilious flux from the bowels relieving the patient, and evacuating almost the same humours with the spitting before described. 4. By a copious discharge of thick urine, depositing a sediment, and relieving the patient, the sediment being at first red, but by degrees turning white, and the urine being discharged before the seventh day. As also when the respiration is easy, the fever slight, and of a good kind, without intense thirst, whilst a heat, moisture, laxity, and softness are equally diffused throughout the whole body.

When we treated of that method of terminating a fever which ends in health at § 594, it was observed that this might happen two ways: for either the material cause of the fever itself might be so subdued, that, being rendered moveable, it might be dissipated from the body by insensible perspiration, or else, being perfectly assimilated with the healthy humours, it might be capable of flowing through the vessels without any impediment to the equable circulation. But this is called the method of resolution or dispersion, concerning which we treated in the history of inflammation at §. 386. Such a mild resolution would be exceeding desirable in the cure of a peripneumony, namely, by which the concreted and stagnant humours being reduced to a state of fluidity, and put into motion, might terminate the inflammation

tion of the lungs. But this resolution cannot always be obtained, since it requires among other things (see §. 386.) the motion of the humours to be sedate, the obstructing matter to be very little compact, the obstructing itself of small extent, and the vessels to be as yet moveable. Hence it is observed in the text, that this way of terminating a peripneumony may succeed chiefly in people of a lax temperature. For, in this case, the vessels easily permit themselves to be dilated, that the obstructing particles may be pressed through the ultimate extremities of the arteries into the veins by the force of the vital fluids urging behind. Hence also it was observed from Hippocrates upon another occasion at §. 386, 588, 683. that strong and laborious people sooner perish by pleuritic and peripneumonic diseases, than those not addicted to exercise. But this resolution may be especially hoped for, if the disorder is seated in the bronchial artery; for then the passage of the blood through the pulmonary artery remains as yet free enough, and therefore there is not so much danger of so great an acceleration of the blood through the pervious vessels; since by the bronchial artery there is only such a quantity of blood sent into the lungs as is proportionable to what is received by the other parts of the body, whereas by the pulmonary artery all the blood in the whole body must pass through in the same time that it completes one circulation through all the rest of the parts of the body. But (as we said before at §. 825.) the bronchial arteries being inflamed compress the contiguous extremities of the pulmonary artery; therefore an inflammation can seldom happen in the bronchial artery, without producing something of the like disorder also in the pulmonary artery; for which reason it is said in the text, that a resolu-

tion may be expected, when the inflamed part of the bronchial or pulmonary artery is not large. For, if a great part of the pulmonary artery is supposed to be inflamed, the right side of the heart will be continually urging against the inflamed parts, and will express the thinnest part of the blood (see §. 826.), and therefore the obstructing mass will acquire too great a viscosity, and at the same time the velocity of the blood's motion will be increased through the as yet pervious vessels; therefore the conditions necessary to a mild resolution will be wanting. But when a small part of the pulmonary artery is inflamed, as the branches communicate with each other by numerous anastomoses, it may happen that the passage of the blood through the lungs may not be much hindered from thence.

Another manner in which a fever terminates in health (see §. 594.), is when the matter of the disease being subdued by the force of the fever is indeed rendered moveable, but yet not so far changed as to be capable of flowing through the vessels with the healthy humours, without any impediment to the even circulation, nor yet so far dissolved as to be able to be expelled from the body under the form of insensible perspiration. Hence therefore appears the necessity for this matter's being expelled by some sensible evacuation for the restitution of health. The same is also true with respect to the happy termination of a peripneumony into health, which disease is much more frequently removed in this manner than by a mild resolution. It therefore remains for us to examine according to the faithful observations more especially of the antient physicians, by what ways nature endeavours to discharge the morbid matter in a peripneumony, concerning which we shall treat in the following number of the present section.

2. Also,

2. Also, that such a change of peripneumony into health may be well expected, it is again to be supposed that the seat of the disorder in the bronchial or pulmonary artery is not very large; the reason of which is evident from what has been said before.

Galen * makes the observation of the spitting of so much consequence in this disease, that he compares it to the sediment of urines, which so often exhibit the most faithful signs of a concoction and expulsion of the morbid matter in acute diseases, as we declared in the history of fevers. For these are his words: *Sic peripneumonici & pleuritici affectibus ea, quae proprie sputa vocantur, urinarum sedimentis assimilantur: nihil vero omnino exspuere, sed tussim tantummodo siccam habere, tale quiddam est, quale in urinis extreme crudum, quod aquosum nominamus, &c.* "thus what is properly called spitting in peripneumonic and pleuritic cases answers to the sediment of urines; but to spit not at all, being troubled only with a dry cough, is in these cases the same thing as extremely crude urine, which we call watery, &c." Nor is this wonderful, since the spitting comes directly from the part affected in this disease.

For the whole surface of the lungs contiguous to the air is continually moistened and lubricated with a mucus, separated from the arterial blood; and to this secretion the bronchial artery seems particularly subservient, as that belongs to the substance of the lungs themselves; whereas the blood of the pulmonary artery is changed by the fabric of the lungs with the inspired air for the use of the whole body. When therefore the ex-

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tremities

* De Crisibus Lib. I. cap. 18. Charter. Tom. VIII. p. 402.

tremities of the bronchial artery are inflamed, it would seem that the obstructing particles may be propelled by the impulse of the blood urging behind through these tender and easily dilatable vessels, till they pass through their ultimate extremities into the air-vessels of the lungs, so as to be discharged together by spitting, with the mucus there separated. But it is evident enough that thus the obstruction is removed which before attended; but then also these vessels are so far dilated as to transmit grosser humours than usual. But there are many observations which confirm the possibility of thus dilating the extremities of these vessels so as to transmit grosser particles. For an haemoptoe or spitting of blood sometimes happens (*per anastomosis*) from a dilatation of the vessels, as we shall declare hereafter when we come to treat of a phthisis; and this is much less dangerous than when it proceeds from an erosion or rupture of the vessels. Thus we see in a cold, when the internal membrane of the nostrils is slightly inflamed and swelled, the light thick matter or gross humours are discharged, namely, of a yellow colour with little streaks of blood, and then at the same time the disorder is happily cured. Also, when the breast is afflicted with a catarrh or defluxion, there is a discharge of the like matter by spitting and with the like success. Thus therefore we may understand in what manner the inflammatory matter obstructing the extremities of the bronchial artery may be discharged by spitting. But, when the same matter is seated in the extremities of the pulmonary artery, there is room to doubt whether the cure of the disease is this way practicable. But it was said before at §. 823. that the branches of the bronchial artery

tery were joined by anastomoses to the branches of the pulmonary artery; and Ruysch ^y discovered by his anatomical injections that the ceraceous matter urged through the arteries filled the vesicles of the lungs: and, although that anatomist does not inform us by which of the arteries he made this injection, yet it seems probably to have been made by the pulmonary artery; since he soon after remarks ^z, that, when he had filled the pulmonary artery with a ceraceous injection, the matter of the injection was likewise admitted into the bronchial artery at the same time. Moreover the celebrated Dr. Hales ^a has very ingeniously proved by experiments, that in the lungs of a calf there is an open passage from the pulmonary artery into the air-vessels of the lungs. For he adapted a glass tube to the pulmonary artery of a calf, into which tube he poured warm water by a funnel, and at the same time alternately dilated the lungs with a pair of bellows fastened to the wind-pipe, in order to try whether by this means water would pass from the pulmonary arteries into the veins. But he was surprised to find that the water forced into the pulmonary artery ran in a full stream out of the wind-pipe, and not at all through the veins; but, as he was under a doubt whether perhaps some of the vessels being broke might make a direct passage to the water, he therefore repeated his experiments upon a calf, and upon other animals, using all necessary caution, and found that the water passed immediately from the pulmonary artery into the bronchia without any rupture

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ture

^y In Catalog. rarior. p. 134.^z Ibidem. p. 162.^a Haemastatics Experiment XI. p. 73, &c.

ture of the vessels. The serum of the blood of a hog being injected into the pulmonary artery of the same animal, while the lungs were fomented in warm water, it passed very freely into the bronchia, but not at all into the pulmonary veins. Moreover warm water being injected by the wind-pipe came out through the pulmonary artery, but not so fast as it ran out through the wind-pipe, when it penetrated through the pulmonary artery into the bronchia of the lungs. But the red blood injected into the pulmonary artery did not penetrate into the bronchia of the lungs, although it was diluted with water and nitre.

From all which experiments it seems to follow that the inflammatory matter lodged in the extremities of the pulmonary artery may be forced out into the air-vessels of the lungs, and that in this manner a peripneumony may be cured by spitting.

But it is not every spitting that is of service in this disease; for, as we shall declare hereafter at §. 848, where we shall describe the symptoms with which a peripneumony terminates in death, there are several kinds of spittings observed, which afford the very worst presage. We must therefore see what conditions a spitting ought to have, that the cure of a peripneumony may be from thence expected.

The spitting ought then to be speedy, free, copious, of a yellow colour mixed with a little blood, of a due thickness or consistence, and soon changing to a white and mild nature.] For, since by this evacuation such a most dangerous disease ought to terminate in health, therefore the spitting should appear in the very beginning of the disorder; for, after the disease has continued some days, there is just reason to fear lest the inflam-

inflammation should turn to suppuration ; which last having once taken place, a purulent spitting may be afterwards of service (as we shall declare at §. 836.) but then a peripneumony does not terminate in health, but in another disease, namely, a vomica of the lungs, of which it is not our business to treat in this place. But the spitting ought to be free, that is to say, easy and capable of being discharged by coughing without much trouble ; since a violent and dry cough may irritate the inflamed lungs in a very bad manner, and at the same time denote that the inflammatory matter to be discharged by spitting is not at liberty, but that the blood-vessels of the lungs being inflamed and swelled compress the bronchia, Hence Hippocrates ^b says : *Sputum vero in omnibus doloribus, qui circa pulmonem & latera (sunt), celeriter ac facile exspui oportet. Si enim multo post doloris initium exspuatur flavum, aut fulvum, aut quod multam tussim excitet, deterius est, &c.* “ but in
“ all pains about the lungs and sides the spitting
“ ought to be speedily and easily discharged. For if
“ a spitting of a yellow or golden colour is excited
“ a long time after the beginning of the pain, or
“ if it excites a violent or frequent cough, it is
“ much worse, &c. And soon after he adds,
Sputum vero flavum mixtum cum pauco sanguine, in peripneumonicis, in initio morbi, excretum, salutare est & valde confert ; si vero septimo die, vel etiam serius procedat, securitatis minus est ; “ but
“ a yellow spitting mixed with a little blood
“ discharged in the beginning of a peripneumony
“ is salutary and very serviceable ; but if it happens on the seventh day, or later, the patient is
“ not so secure.”

But

^b In Prognostic. Charter Tom. VIII. p. 640, 641, 644.
 Coac. Praenot. No. 390. Ibid. p. 874.

But the spitting ought to be copious, that it may intirely evacuate all the matter of the disease; for it otherwise denotes a fruitless endeavour of nature, which may be esteemed a bad omen in all evacuations of morbid matter, as we observed before upon another occasion in the comment to §. 587. where we treated of a crisis. And from hence Hippocrates ^c seems to derive the following maxim; *Qui in peripneumoniis siccis pauca concocta educunt, metuendi sunt*: “ That they who discharge but a little of a concocted matter in dry “ peripneumonies are to be feared.” But, since the material cause of the disease is discharged through the dilated extremities of the arteries into the cavity of the bronchia, therefore from the same cause a greater quantity of humours will escape through the dilated vessels, whence the quantity of the spitting will be increased.

But a yellow spitting with small particles of blood is approved of, as is evident from the passages before cited, namely, when streaks of blood appear dispersed through the yellow matter discharged by spitting; though this appearance frequently terrifies the unskilful, when at the same time it is of the best import in this disease. For they are afraid lest the pulmonary vessels being burst should in a little time pour out streams of blood: but this appearance of blood in the spitting seems to arise from the red globules which hesitated, immoveable in the ultimate small sanguiferous arteries, or which entered the smaller vessels by an error of place (see §. 1108.) now gradually protruded thro’ the dilated vessels, till they are at length expressed through the mouths of the small arteries opening into the cavity of the bronchia. Hence Celsus ^d gives us

^c In Coacis No. 416. Ibid. p. 876.

^d Lib. II. cap. 8. p. 66.

us the following just admonition in the disease of the lungs (a peripneumony.) : *Neque inter initia terri convenit, si protinus sputum mistum est rufo quodam sanguine, dummodo statim sedetur* : “ Nor
 “ ought one to be frightened in the beginning
 “ of the disease, if on a sudden the spitting should
 “ appear to be mixed with some red blood, pro-
 “ vided it immediately relieves the disorder.”
 But the thickness and yellow colour of the spitting denote that a concoction of the morbid matter is already begun. For, as Galen^e observes, *Ab omnibus enim partibus inflammatis, quibus densum & crassum integumentum non incumbit, tenues quidem circa initia ichores defluunt, concoctis vero inflammationibus crassiores & magis purulenti* : “ From all
 “ inflamed parts which are not covered with a
 “ thick and strong integument, towards the be-
 “ ginning of inflammations there are thin and
 “ ichorous humours discharged ; but, when the
 “ humours are concocted in inflammations, those
 “ which are discharged appear thicker and more
 “ purulent.” For here there seems to be formed something like pus, when the inflammatory matter being gradually dissolved and rendered moveable passes through the extreme orifices of the small arteries into the cavity of the bronchia, where being collected and stagnating, with the warmth of the part and a dissipation or absorption of the more thin juices, it is changed into a white, mild, uniform and thick humour, which is afterwards discharged by spitting. Whereas matter properly so called at §. 387. consists not only of extravasated humours concocted and changed by the remaining life, but likewise of the extremities of the most tender vessels themselves filled with impervious humours

^e Galen. de Locis affectis Lib. V. cap. ultimo Charter. Tom. VII. pag. 502.

humours broken off and changed together with the extravasated humours into one uniform liquid. But it does not in the least seem repugnant to reason, that a humour at least analogous to pus or matter may be formed of the extravasated juices without a destruction of the solid parts. Moreover upon another occasion, in the comment to §. 593. where it was explained in what manner a fever terminating in another disease sometimes produces an abscess, it was demonstrated that the material cause of the fever might be so changed and subdued by the fever itself as to acquire a nature like that of pus or matter, though it continued as yet to flow together with the rest of the humours through the vessels. But, when an inflammation is seated in such a part of the lungs as affords a short and easy passage to the humours thus changed into the bronchia, they are rather discharged by spitting than mixed with the circulating humours and expelled by other emunctories, as we shall declare hereafter in the following numbers of the present section. From hence the reason is evident at the same time, why a speedy change of the spitting to a white and mild disposition is so much approved in this way of terminating a peripneumony, because then the most perfect concoction of the morbid matter is indicated. Hence Galen[†], when he explains why Hippocrates approves a speedy discharge by spitting in pleuritic patients, after taking notice of every thing that has been before alledged, he adds: *Crudissima namque est (pleuritis) in qua nihil omnino exspuitur; secundum ordinem obtinet, in qua ichores tenues; tertium in qua crassiores; quartum in qua omnino cocti sunt. At hi si circa tertium vel quartum diem apparuerint, non contingit,*

[†] In Commentar. in Aphor. 12. Sect. I. Charter. Tom. IX. pag. 20, 21.

contingit, morbum ultra septimum diem progredi :
 “ For the pleurisy is most stubborn or crude, in
 “ which there is no spitting at all ; next to this
 “ kind come those pleurisies, in which there is a
 “ discharge of thin ichorous humours ; in the third
 “ and next place come those in which the hu-
 “ mours discharged by spitting are of a thicker
 “ consistence ; and in the fourth or last place come
 “ those in which the humours are perfectly con-
 “ cocted. But in these last, if the discharge of
 “ the concocted humours appears about the third
 “ or fourth day, the disease does not extend itself
 “ beyond the seventh day.” But Hippocrates ^z
 calls the spitting concocted when it very much re-
 sembles pus or matter. But since such spittings
 are usually thick enough in consistence, and yet
 do not adhere too firmly by their tenacity, they
 are always easily discharged ; but those spittings
 which are thin and ichorous are with much more
 difficulty discharged. For, as Galen says, *Nam*
qui aquosi sunt (humores) & exquisite tenues, spiritum,
qui tussiendo extra mittitur, circumfluunt. Is enim
tanquam manus quaedam existit secum ferens sursum
crassos humores : “ Those humours which are wa-
 “ tery and very thin escape or run from the breath
 “ which is expelled in coughing : whereas the
 “ same breath or air lays hold of the thick hu-
 “ mours as with a hand, and carries them up-
 “ wards.” ^h They who are afflicted with a ca-
 tarrh or cough from taking cold in the lungs, ex-
 perience all this to be true : for in the beginning
 of the disease the spitting being thin cannot be
 brought up but with the greatest trouble, but after-
 wards

^z In Libro de Victu acutor. Morb. Charter, Tom. XI.
 pag. 161.

^h Galen. Comment. III. in Hippocrat. de Victu acutor. ibid.
 pag. 80.

wards the same, acquiring a thicker consistence, is very easily discharged.

The pain abating and the respiration being eased by it, the pulse becoming larger and fuller.) A careful observation of what helps and injures is of the greatest use in the cure of diseases, and from thence the surest rules in the practice of physic are derived, as we declared before in the comment to §. 602. No. 7. and it may be demonstrated from many instances of Hippocrates how much he esteemed this method; whence also, that we may be certain a spitting has been serviceable, we ought to attend to these particulars. For since by a spitting, when nature endeavours this way to discharge the matter of the disease, that ought to be evacuated which occasioned an obstacle of the free motion of the humours through the lungs, it is very evident that all the symptoms thence proceeding must abate in proportion to the discharge. If therefore a pain attends, which we demonstrated before in the preceding section to be not always a concomitant of this disease, it ought therefore to be remedied; if the respiration becomes difficult from the blood-vessels of the lungs being stuffed up, so as to render them less capable of expansion (see § 826.) it must be likewise relieved; and since the left ventricle of the heart receives less blood, because that fluid is denied a free passage through the lungs, therefore there will be less blood propelled through the aorta and it's branches, whence the pulse is frequently small and soft in this disease; and therefore, when the free passage of the blood is restored through the lungs, the pulse must become larger and fuller. When all these signs attended or follow a discharge by spitting, we are then certain that the material cause of this disease has been that way

way expelled. Hence also Hippocrates¹, after enumerating the good and bad qualities of what is discharged by spitting, lays down the following as a general maxim: *Omnia autem sputa mala sunt, quae dolorem non sedant, &c. Omnium autem, quum excreantur, optima, quae dolorem sedant*: “But
 “all spittings are bad which do not relieve the
 “pain, &c. but of all spittings those are best
 “which quiet the pain.” For thus he seems willing to point out that the various colour, consistence, &c. of the spitting are much concerned in the prognosis, but yet that a relief of the symptoms of the disease following a discharge by spitting, affords the most certain sign of all, even though what is spit out deviates from the conditions before recommended. I well remember myself to have sometimes observed a tough mucous spitting in the beginning of this disease, being uniformly tinged with blood throughout it's whole substance, which not only afforded considerable relief, but was likewise soon followed with a perfect cure. But in such cases, the red part of the blood hesitating immoveable in the inflamed vessels seems to have passed through the dilated extremities of those vessels into the bronchia, and to have been discharged by spitting, before it could be changed into a more concocted matter or spitting by longer delay.

3. We have already seen how the material cause of a peripneumony, being dissolved and rendered moveable, may be discharged by spitting. But the same matter may likewise pass through the extremities of the arteries into the veins, and, mixing with the circulating humours, it may afterwards be expelled by various out-lets from the body, since it has now acquired such qualities

¹In Prognosticis Charter. Tom. VIII. pag. 645.

lities as will not permit it to mix with the other humours without injury to the functions. But since, by the common and usual laws of nature, the useless and offensive parts of the humours are expelled by urine and stool, therefore it is evident that the morbid matter may pass off by those ways. The same thing seems to be acknowledged by Hippocrates, ^k when, in treating of diseases invading the lungs, or sides, he says *Quicumque vero dolores ex his locis neque per sputorum expurgationes, neque per alvi dejectionem, &c. sedantur, eos suppuraturos sciendum est* : “ But in such as have
 “ pains in these parts neither removed by a discharge of spitting nor evacuations by stool, &c.
 “ you must know that in such a suppuration is about to follow.” From which passage it evidently appears, that in such cases he expected a discharge of the morbid matter in this way; which is also confirmed by another passage of Hippocrates ^l, where he reckons up bilious discharges by stool among those evacuations whose absence in peripneumonic patients denote future suppurations. Nor is it any objection to this that in other places, ^m as we before observed in the comment to § 720. we see, that Hippocrates condemns a diarrhoea and flux or disturbance of the bowels in those afflicted with a pleurisy or peripneumony; for that flux concerning which he there speaks seems to be symptomatic and very profuse; for he calls it (*κοιλίην ταραχθεῖσαι & διάρροϊαν*) a disturbed indisposition and flux of the bowels: but in those places, where he mentions only an useful looseness of the bowels in a peripneumony, he calls it (*ἐκκόπρωσιν & διαχώρησιν*) which only denote a moderate

^k Ibidem pag. 646.

^l Ibid. pag. 654.

^m Aphor. 16. Sect. VI. Charter. Tom. IX. pag. 256. & De Morbis Lib. I. cap. 4. Charter. Tom. VII. pag. 535.

rate and gentle evacuation from the bowels. Moreover such violent and symptomatic disturbances of the bowels commonly attend only such acute diseases as are of the worst kind, and which tend to a period almost certainly fatal; whereas such a mild evacuation of the morbid matter can be hoped for only in the slighter peripneumonies. Hence Galen,ⁿ explaining the fore-mentioned Aphorism, says: *Moderatae tamen pleuriditi, aut peripneumoniae superveniens diarrhoea, potest aliquando vacationis ratione prodesse, multoque magis postquam coctionis signa morbis inesse apparuerint, neque metus adest, sed morbus periculo vacat*: “But
 “ a diarrhoea supervening a mild pleurisy or perip-
 “ neumony may be sometimes serviceable as an
 “ evacuation, and this more especially, after signs
 “ of concoction appear in the disease, nor is there
 “ then any reason to fear, but the disease is with-
 “ out danger.”

But, since that which caused the disease, and which we have before seen to be discharged under the form of a thick, yellow, and copious spitting mixed with a little blood, and soon changing to white and insipid, is now expelled by stool, therefore the reason is evident why the flux from the bowels ought to have the same qualities with what is discharged by spitting. But, since from the bowels there are often other matters discharged besides that of the disease mixed together, therefore we cannot always plainly distinguish whether the matter discharged is like that here described. But in this case the relief of the disease will afford a most certain sign: *Si enim qualia purgari oportet, purgentur, & confert & facile ferunt; sin minus, contra*: “For, if those matters are evacuated which
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ⁿ In Commentar. Aphor. 16. Sect. VI. Charter. Tom. IX. pag. 256.

“ ought to be discharged, the evacuation relieves
 “ the patient and is easily supported; but not so,
 “ if the contrary.”^o Which Aphorism Hippocrates very justly lays down for a general criterion or distinguishing mark of such spontaneous evacuations.

But the flux from the bowels is said to be bilious; not for that an evacuation of bile properly so called is necessary in this case, but because a matter of a yellow colour is discharged by stool; as, in the former case, the matter of the disease was expelled by a yellow spitting. For Hippocrates^p calls the spitting of peripneumonic patients bilious, after calling it a little before by the name of (ξανθὸν) yellow. And Aretaeus calls a spitting: (ὕπόχολον κατὰ πόρες) exquisitely bilious; and when the disease changes for the better, he observes, *fieri biliosorum succorum dejectionem, qui ex pulmone in anum ventrem depulsi videri possunt*: “ That there follows an evacuation
 “ of bilious juices by stool, which seem to be
 “ deposited from the lungs upon the lower
 “ venter.”^q

4. That evacuation likewise of the morbid matter dissolved and rendered moveable, which is made by urine, is recommended in this disease. We have already seen at the second number of the present section, that a matter resembling pus is discharged by spitting with the best success. But Galen observes (see the passages cited at § 387. and 593,) *uti vincente natura in inflammationibus & omnibus tuberculosis tumoribus pus fit, ita in humoribus venarum & arteriarum illud, quod subsidet in urina, puri analogum*: “ That, as pus or matter is formed
 “ when

^o Hippocrat. Aphor. 2. Sect. I. Charter. Tom. IX. p. 5.

^p In Prognosticis Charter. Tom. VIII. pag. 646.

^q De causis & signis Morbor. acutor. Lib. II. cap. 1.

tenues ac acres sint, & sudores circa cervicem & caput oboriantur. Hi enim sudores pravi sunt, prae suffocatione, robore & impetu morbi superantibus, nisi urinae copiosae ac crassae cum impetu eruperint, & sputa cocta prodierint. Horum autem quodcunque sua sponte evenerit solvit morbum : “ But, when a
 “ peripneumony has arrived to it’s height, it is
 “ not curable without an evacuation follows it :
 “ and it is of a malignant disposition if the pa-
 “ tient breathes difficultly, voids a thin and acrid
 “ urine with sweats arising about the head and
 “ neck. For these sweats are of a bad kind and,
 “ with the violence of the disease joined with suf-
 “ focation and redness, destroy the patient, unless
 “ a copious discharge of thick urine ensues with
 “ some force, or a spitting of concocted matter
 “ appears. But, when either of these last evacua-
 “ tions breaks out spontaneously, it terminates the
 “ disease.” Yet is it not impossible but that an
 evacuation of the morbid matter may be made by
 several ways at one and the same time. For
 Aretaeus,* after saying that a copious haemorrhage
 from the nose or evacuation by stool relieves the
 disease, adds : *Est etiam, quando in urinas conver-*
titur. Quibus autem omnino simul accidunt, illi ce-
lerrime sublevantur : “ That it sometimes goes off
 “ likewise by urine. But that those, in which all
 “ these evacuations happen at the same time, are
 “ the most speedily remedied.”

From hence we may be able to understand why
 Hippocrates† says in his Coan Prognostics : *Quibus*
in peripneumonia urinae crassae in principio, deinde
ante quartum diem tenues fiunt, lethale : “ That in
 “ those patients who have a thick urine in the be-
 “ ginning

* De causis & signis Morbor. acutor. Lib. I. cap. 1.
 pag. 10.

† N°. 415. Charter. Tom. VIII. pag. 876.

“ginning of a peripneumony, if afterwards the
 “urine becomes thin before the fourth day, it
 “is a fatal sign.” But here we are not to under-
 stand thick urines which remain turbid with-
 out any hypostasis, but such as deposit a sedi-
 ment, as is evident from another place^u, where
 he gives the same prognosis in the following man-
 ner: *Peripneumonicis vero perniciofa est urina,*
quae in principio quidem cocta, post quartum diem
tenuis redditur; “but the urine is very bad in
 “peripneumonies, which appears concocted in
 “the beginning, but after the fourth day be-
 “comes thin.” For it is well known that a
 thick urine without a sediment is by all physici-
 ans termed crude. In this text indeed we read
 after the fourth day; but the former reading is
 much more probable, which says before the fourth
 day, because an intire resolution of a peripneu-
 mony is seldom or never observed before the
 fourth day, nor does there seem any danger to
 be feared, if the urine is discharged thin after
 the fourth day, when the morbid matter has
 been evacuated.

But, in order to disperse a peripneumony by
 urine, it is necessary for the discharge to be very
 copious, for otherwise it will not suffice: but
 the discharge ought also to be made before the
 seventh day; since, if this disease continues longer
 without any salutary discharge, there can be no
 hopes of curing it without another disease follow-
 ing. But a white and uniform sediment in the
 urine denotes safety to the patient and shortness
 of the disease, as Hippocrates^{*} observes to us;

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but

^u Ibid. No. 580. p. 586.

^{*} In Prognostic. Charter. Tom. VIII. p. 631.

but he likewise tells ^y us; that a reddish-coloured sediment very light is salutary, although it is a sign of the disease continuing longer than when there is a white sediment. Hence it appears why a sediment at first red, afterwards changing white by degrees, is so much recommended, because it denotes a perfect concoction and change of the morbid matter. But a reddish-coloured sediment of the urine in this disease seems to have been judged useful by Hippocrates: for, after having said that a concocted spitting is like pus or matter, he immediately adds ^z, *urinae vero, ubi sedimenta subrubra habuerint, quale ervum est*; “but the urine wherein there is a reddish sediment like the colour of vetches or tares.” But in the mean time the disease, being relieved after such a discharge of urine, affords the most certain sign that the morbid matter is this way evacuated; which has been likewise observed concerning the other evacuations.

These are the ways by which a peripneumony terminates in health. To these Aretaeus ^a adds a copious haemorrhage from the nose; the efficacy of which in the cure of the most dangerous diseases; and the signs by which it may be foreseen when about to happen, we have already examined upon another occasion (see §. 731.) But in the mean time this evacuation seldom terminates a peripneumony; at least I have not myself had an opportunity of seeing the disease terminate in this manner; and this opinion is likewise favoured by Galen ^b, who, in reckoning up the critical evacuations proper to each disease, says: *Non ta-*
men

^y Ibid. p. 633.

^z De Victu Morbor. acutor. Charter. Tom. XI. p. 161.

^a De causis & signis Morbor. acut. Lib. II. cap. 1. p. 11.
De Crisibus Lib. III. cap. 3. Charter. Tom. VIII. p. 430.

*men lethargus aut peripneumonia sanguinis eruptionibus gaudent. Inter ipsas autem pleuritis medium obtinet locum; minus enim quam febris ardens & phrenitis, magis autem quam peripneumonia & lethargus, profluvio sanguinis solvitur; “ yet a
 “ lethargy or peripneumony are not favoured
 “ with an irruption of blood. But among these
 “ diseases a pleurisy holds the middle place, for
 “ it is more easily remedied by a discharge of
 “ blood than a peripneumony or lethargy, though
 “ not so much as an ardent fever and phrenzy.”*

But the termination of a peripneumony in health cannot be expected, unless the disease is but slight, that is, unless the inflammation be seated only in the bronchial artery, or in but a small part of the pulmonary artery. All this we know to obtain from the signs enumerated in the text; for there is then an easy respiration, because the course of the blood through the lungs is not much obstructed by so slight an inflammation; and therefore the blood will not be accumulated in the pulmonary artery, but the lungs will be easily capable of expansion. But the fever ought to be mild, of a good condition, and not attended with any terrifying symptoms. But, since it is attended with a thirst, dryness, and an imperviousness or considerable degeneration of the humours, as it's cause, (see §. 636.) and as this cause is always the least present in a slight fever of a good kind, therefore it is necessary for the patient not to be troubled with thirst: for we do not here understand that want of thirst which is observed in the worst diseases, wherein the patient is not sensible of thirst, tho' the causes of violent drouth are present in the body, concerning which we treated in the comment to §. 637. and 739. Because, in such a

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slight

flight peripneumony the passage of the blood from the right to the left side of the heart through the pulmonary artery is not much impeded, therefore the left ventricle will receive a sufficient quantity of blood, which it will propel through the aorta and all it's branches: hence the heat will be equally diffused even to the extremities, and from the perviousness of the humours and vessels there will be a moisture, softness, and laxity throughout the whole body. But all these signs have been collected by Hippocrates^c: *Sunt autem haec bona, morbum ipsum facile ferre, ex facili spirare, dolorem sedatum esse, facile sputum extussire, corpus aequaliter molle & calidum apparere, & sitim non habere; urinas, dejectiones, somnos, & sudores, uti scriptum est, singula bona succedere. Hæc enim omnia si contigerint, non morietur homo:* “ But these following are good
 “ signs for the patient easily to support the disease,
 “ to breathe easily, for the pain to be sedate, for
 “ the matter to be easily coughed or spit up, for
 “ the body to appear uniformly soft and warm
 “ without thirst; for the urine, stools, sweat,
 “ sleep to succeed each of them regularly, according to the description given of them.
 “ For, if all these happen together, the patient
 “ will not die.” He then goes on to enumerate those signs which denote death and the greatest danger in this disease, concerning which we treated before at §. 826, and concerning which we shall treat in some measure hereafter.

^c In Prognosticis Charter. Tom. VIII. p. 648.

S E C T. DCCCXXXI.

A Peripneumony terminates in another disease, depending on the nature of the inflammation or of the lungs themselves, according as they are deprived of their proper action by the inflammation.

We come now to consider the various ways in which a peripneumony terminates in another disease. Since therefore a peripneumony is a true inflammation (see §. 820.) therefore all the events or ways of terminating inflammation into other diseases may here take place, namely, suppuration, gangrene, and scirrhus. But besides these other diseases may follow a peripneumony, inasmuch as the proper action of the lungs is disturbed by the inflammation and its consequences, which ought especially to be observed. For the lungs receive the inspired air, which is afterwards expelled by expiration; they transmit the blood drove from the right ventricle of the heart into the left, and so change it in that passage, that it becomes fit to support the actions which are maintained by the efficacy of the humours in life and health^a. At the same time also it is evident from physiology, that the chyle prepared from the food and drink taken into the body, and mixed with the venal blood in the subclavian vein, passes immediately through the lungs, in which passage it is most equally mixed with the blood, and by the repeated action of the arteries and lungs acquires the nature of our animal humours; when therefore the action of the lungs is disturbed or diminished

^a Vide H. Boërhaave Institut. §. 208.

nished by this disorder or it's consequences, there may remain a difficulty of respiration as long as the person survives (see §. 843.) When the passage of the blood from the right ventricle of the heart is impeded through the lungs, the veins returning the blood from the head cannot empty themselves, whence the peripneumony is frequently changed into a fatal phrenzy (§. 826.) But since in this disease the action of the lungs upon the blood and chyle moved thro' it's vessels is disturbed, therefore nutrition may be hindered, whence leanness and great weakness (§. 835.) and for the same reason likewise all the secretions and excretions of the fluids may be changed, and consequently innumerable disorders may be produced which result from thence. We come now therefore to consider each way of terminating a peripneumony either by suppuration, gangrene, or scirrhus; and at the same time we shall remark the principal symptoms which accompany these disorders.

S E C T. DCCCXXXII.

HENCE the first way of terminating a peripneumony into another disease is that of suppuration, which happens, when the inflammatory matter (§. 376, 377, 824.) not being capable of a resolution by nature herself (§. 830.) nor remedied by art, yet of a mild condition (§. 387.) stagnating with heat and pulsation breaks thro' the small vessels, dissolves them into pus or matter, distending the containing sides, and by corroding forms

forms an abscess or vomica within the space of fourteen days.

When the inflammatory matter is too compact or so far drove into the extremities of the smaller vessels that it cannot be resolved spontaneously, nor so attenuated by the remedies used, that the vessels may become again pervious, either by a simple resolution, or by an evacuation of the morbid matter as explained at §. 830, then a suppuration is to be expected, provided the matter is of a mild disposition, for otherwise a gangrene will rather happen. But in what manner an inflammation turns to suppuration, and how the inflammatory matter with the very small vessels in which it is contained are changed into pus, was explained in the comment to §. 387. But since the heart, which is so near, urges the vital humours into the obstructed vessels, which are exceeding small and tender in the lungs, which are a viscus never capable of standing still or being at rest, but are agitated with a more frequent respiration even during this disease; it is therefore evident enough that even a slight inflammation, unless it can be soon dispersed, will speedily incline to suppuration. Hence the reason is evident, why a peripneumony if it is not very violent and suddenly fatal, so frequently terminates by suppuration.

But when the inflamed parts have turned to suppuration, and the matter thence formed is collected and retained in a cavity, it is called an abscess (see §. 402.) or vomica, because the parts mutually recede from each other which were before contiguous. But the quantity of pus gradually increasing augments the cavity wherein it is contained,

tained, either by distending the sides or by corroding the adjacent parts, after becoming acrid by stagnation, till at length the abscess breaking either spontaneously, or by art, gives a passage to the confined matter.

But an abscess of the lungs is said to be formed within the space of fourteen days, because during the whole stage of the disease before the fourteenth day there is reason to hope the inflammatory matter may be reduced to a state of fluidity by a mild resolution, or be discharged from the body by various excretions (see §. 830.) or else be deposited upon other parts of the body (see §. 837.) But when a peripneumony has continued for fourteen days, and none of these forementioned circumstances appear, there is reason to believe an abscess is formed in the lungs. Add to this that the two first weeks have the number of their critical days more remarkable and efficacious than those which follow after, as we demonstrated in the comment to §. 741. where we treated upon critical days: and therefore, after this time of the disease has elapsed, there is less reason to expect an excretion of the morbid matter by critical evacuations. This is taken notice of by Hippocrates^e when he says: *Quicumque vero peripneumonici non repurgati sunt per sputa principibus diebus*: “ but whosoever afflicted with a
 “ peripneumony is not purged or cleansed by
 “ spitting in the first days (for here Galen^f proves the word ἀνεκάρθηνσαν to signify an evacuation by spitting;) *sed mente moti quatuordecim dies effugerunt, periculum est suppuratos fieri*;
 “ but continues delirious fourteen days and sur-
 “ vives,

^e Coac. Praenot. No. 396. Charter. Tom. VIII. p. 875.

^f In Comment. Aphor. 8. Sect. V. Charter. Tom. IX. p. 919.

“vives, there is danger of their having a sup-
 “puration.” But in another place Hippocra-
 tes² extends this time to the twenty-second day,
 where he gives us the following words: *Quod*
si decimo quidem quinto die pulmo reficcatus fuerit,
& per tussim rejecerit, convalescit; sin minus, duos
& viginti dies observato. Si enim his diebus tussis
sedata fuerit, evadit; at si non cesset, illum interro-
ga num sputum ipsi dulcius videatur. Quod si dix-
erit, morbus annuus evadit, nam pulmo purulentus
redditur: “But if indeed the lungs should be
 “dried up by the fifteenth day, and the patient
 “shall reject the matter by coughing, he reco-
 “vers. And the same happens nevertheless when
 “it has been observed two and twenty days af-
 “ter. For, if the cough is allayed during these
 “days, the patient recovers; but, if it does not
 “cease, ask him whether the spittle seems sweet
 “to him; which if he affirms, the disease will
 “be of a year standing at least, for the lungs
 “become purulent.”

But since this way of terminating a peripneu-
 mony is always dangerous, as it forms a puru-
 lent vomica or abscess in one of the vital viscera,
 it will be therefore necessary for us to take a view
 of those signs which point out it's approach, that
 this malady may be prevented as much as lies
 within the power of art.

But, if an abscess of the lungs cannot be pre-
 vented, the curative indication (§. 402. No. 1.)
 directs that crude inflammatory matter to be
 brought to maturity as soon as possible; and
 therefore it will be a thing of consequence for
 us to know those signs which declare an abscess to
 be

² De Morbis Lib. II. cap. 16. Charter. Tom. VII. p. 567.
 & de Morbis Lib. III. cap. 14. Ibid. p. 589. & Lib. I. cap.
 11. Ibid. 547.

be now actually forming; and at the same time it will be of use to know the signs of an abscess already formed, that then such remedies may be timely used as may procure a discharge to the confined matter. But concerning each of these we shall treat in the following sections.

S E C T. DCCCXXXIII.

THAT such a suppuration is about to happen in the lungs (§. 832.) is demonstrated by the following observations: 1. if the certain signs of a peripneumony are sufficiently sharp (§. 825, 828.) and yet not the most violent (§. 326.) at their first appearance. 2. If a resolution and it's signs (§. 830.) do not appear soon enough, namely, before the fourth day. 3. If the symptoms (§. 825, 826.) have not been removed by a concocted spitting evacuated orderly on critical days, namely, the third, fifth, seventh, ninth, eleventh, or fourteenth; successively changing in colour and consistence so as to promise a cure; or if those symptoms are not removed by bleeding, medicines, or proper diet. 4. But on the contrary, if the symptoms not of the most violent kind continue obstinate with a constant delirium, and a soft wave-like pulse.

1. For the patient to subsist until an abscess is formed in the lungs requires the inflammation to be seated in the extremities of the bronchial artery, or else in but a small part only of the pulmonary

monary artery; for otherwise those very worst symptoms and sudden death are to be expected, concerning which we treated at §. 826. But then also the inflammatory matter must be so compact and so far wedged into the narrow extremities of the vessels as to be incapable of a resolution. A peripneumony thus conditioned may be termed sharp or severe enough, though none of the most violent. An intense fever, a dry and irritating cough increasing upon deep inspiration, together with a heat diffused even to the extremities, and denoting that the lungs are not too much stuffed up or obstructed, are the principal signs of such a peripneumony. Hence also Hippocratesⁿ observes that peripneumonic patients incline to suppuration, *quibus naturae & corporis dispositiones humidae sunt, quin etiam morbus vehementior*; “who are of a moist nature and “habit of body, as also those who have the disease more violent.”

2. What conditions are required for the cure of a peripneumony by a mild resolution, we declared at §. 830. But the signs of such a resolution are for the disease to be in it's own nature slight, and for all the symptoms to begin to diminish without any sensible discharge or translation of the morbid matter. When therefore such a relief of the symptoms is not perceived before the fourth day, there is no longer room to hope for a resolution, but there is just reason to fear the inflammation will turn to suppuration. For, if we consider the impulse of the vital humours drove by the adjacent heart into the obstructed vessels has acted for so long a time, it will be evident enough that the impervious humours must be now so changed, that they can no longer

ⁿ De Morbis, Lib. III. cap. 14. Charter. Tom. VII. p. 589.

longer be moved through the vessels with the healthy humours without damage; also that a considerable force is applied upon the very tender vessels of the lungs, in which the inflammatory matter hesitates; and therefore that there is reason to fear, their cohesion being thus weakened, that their obstructed ends will in a little time be separated from the sound and vital parts; and consequently that a cure by resolution is altogether impracticable, which supposes a reduction of the concremented matter to a state of fluidity, and a circulation of that which stagnated through the vessels as yet intire.

3. In the comment to §. 830. it was said, that, the matter of the disease being subdued, and rendered moveable, and in the mean time so altered from the conditions of the healthy humours, that it cannot flow with them through the vessels without damage, unless it be so far attenuated as to exhale by insensible perspiration, it must be carried off by some sensible evacuation; we there likewise observed that by a spitting there is often a discharge commodious enough made of the morbid matter in a peripneumony; and it was likewise remarked that sometimes the matter is also expelled by other ways. If therefore none of these evacuations have been observed, and in the mean time the symptoms of the disease continue, we know that the morbid matter remains in it's former seat, and that therefore there is danger of a suppuration. We there explained what is to be understood by the name of a concocted spitting: but how much the endeavours of nature conduce to evacuate the morbid matter in diseases, upon certain days, was declared more at large in the comment to §. 741. where we treated of critical days.

days. Therefore Hippocratesⁱ says *Si peripneumonia correptus diebus principibus non purgetur, sed sputum & pituita in pulmone remaneant, suppuratus fit*: “That if one afflicted with a peripneumony
 “has not a discharge on the principal days, but
 “the spittle and phlegm remain in the lungs, he
 “will have a suppuration.” But it appears from another text of Hippocrates cited under the preceding section, that the discharge here intended is a spitting. But it is also evident at the same time, that the symptoms of the disease cannot be removed, unless the lungs are set at liberty by a spitting, which ought therefore to be sufficiently copious: *Suppurati enim fiunt, quum minus exscreant, quam ad pulmonem defluit*: “For such have a
 “suppuration who spit less matter than flows to
 “the lungs.”^k But moreover it is necessary for the spitting to continually change to such a condition as denotes a perfect concoction of the morbid matter, as we declared at §. 830. Hence the reason is evident, why Hippocrates^l who so much recommends a yellow spitting mixed with a little blood in the beginning of the disease, yet condemns a simple yellow spitting as dangerous, namely, because all the obstructed vessels are not set at liberty, for otherwise there would appear something of blood in that spitting: he likewise pronounces a white, viscid, and uniform spitting to be useless, because it contains none of the morbid matter, but consists only of the inspissated mucus lubricating the bronchia compacted into a roundish figures in the cells of the lungs. But the successive

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ⁱ De Morbis Lib. I. cap. 6. Ibid. pag. 537. & Lib. de Affection. cap. 3. Ibid. pag. 622.

^k Hippocrat. de Locis in homine cap. 7. Charter. Tom. VII. pag. 366.

^l In Prognosticis Charter. Tom. VIII. pag. 642, &c.

change of the spitting, till it arrives at a perfectly concocted state, is esteemed of so much importance by Hippocrates, that without this he believed it scarce possible for the patient to recover, although the disease might run out to a considerable length of time. For these are his words^m : *Quicumque vero cum bilioso (flavo) purulentum educunt, aut seorsum, aut permixtum, plerumque decimo quarto die moriuntur, si non mali aut boni quippiam ex praescriptis superveniat; sin minus, pro ratione: maxime autem his quibus septimum diem agentibus tale sputum incipit*: “ But whosoever discharge a bilious, yellow, or purulent matter either by itself or mixed, such generally expire on the fourteenth day, if no good or bad event is brought about by the remedies prescribed; but this, unexpectedly: but there is most danger in those who have such a spitting begin about the seventh day of the disease.” For this denotes, that the morbid matter is only in part subdued and concocted; whence Galenⁿ well observes, that, as the cure is very difficult when external parts of the body suppurated discharge pus or matter together with another thin and crude humour distinct, so the same is likewise true in the present disease, and therefore such a spitting is deservedly esteemed one of the worst signs.

But since in this dangerous disease the most efficacious remedies are immediately applied by skillful physicians, as we shall declare hereafter at §. 854. in order to procure a mild resolution, and to promote those evacuations of the morbid matter, which nature is used to attempt in this disease if all these remedies have no effect, but the disease

^m In Coacis N°. 492. Charter. Tom. pag. 874. Et Prognost. ibid. pag. 646.

ⁿ In Commentariis in hunc locum, ibidem.

ease continues the same together with it's symptoms, a suppuration may be justly expected. All these particulars are summed up by Hippocrates^o when he says: *Quicumque vero dolores ex his locis neque per sputorum expurgationes, neque per alvi dejectionem, neque per venae sectiones, & dietam, & medicamenta, sedantur, eos suppurationem facturos esse sciendum est*: "In all those whose pains are not relieved
 " in these parts neither by the discharge of spit-
 " ting, nor the evacuation by stool, nor by blood-
 " letting with diet and medicines, we may be
 " sure such have a suppuration."

4. Galen^p has well observed this state of a peripneumony to be at a medium betwixt that which may be soon removed, and that which is incurable. The symptoms therefore will be here not of the worst kind, though they continue obstinate from the continuance of their cause. Since therefore the free course of the blood from the right to the left ventricle of the heart is heart obstructed, at least in part, therefore the branches of the aorta cannot be much distended, and consequently the pulse will seem soft, but quick at the same time, because the celerity of the blood must of necessity be increased through the vessels of the lungs which are as yet pervious, to continue the circulation. But the pulse which is quick and soft at the same time is said to be undulating, because the arteries are not much dilated, but affect the finger of the person feeling, as if the blood slid through the arteries in waves. But since (as was proved in the comment to (§ 826.) so soon as the right ventricle of the heart cannot empty itself into the pulmonary artery, the return of the venal blood from the encephalon is rendered difficult, and, as in this

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case

^o In Prognosticis, ibidem.

^p In Commentariis in hunc locum, ibidem.

case the impediment continues a long time, therefore the reason is evident why a delirium usually accompanies this disease while it tends to suppuration. For it was proved before in the commentaries to §. 701. that an impediment of the influx, transflux, and efflux of the blood and humours through the brain, must excite a delirium. But that a phrenzy is fatal, when followed with a peripneumony, was proved at §. 774. But a delirium which is neither fierce nor perpetual, may be longer supported by the patient; and in the Prognostics of Hippocrates, cited under the preceding paragraph, where we spoke of a delirium in a peripneumony about to suppurate, it is to be observed, that he uses the word *παρὰ νοσήσας*, which he frequently puts to signify a slight delirium, as we have observed before in the comment to §. 774.

S E C T. DCCCXXXIV.

BUT that a suppuration is already begun in a peripneumony we know from the following signs: 1. If those circumstances beforementioned (§. 833.) are present. 2. If slight shiverings attend and are often repeated, sometimes in one part and sometimes in another, without any other manifest cause; if the pain is mitigated or removed, but the dyspnoea continues; if the cheeks and lips look red, the patient is thirsty, troubled with a fever, especially in the evening, the pulse being soft and weak.

1. Concerning these, we have already treated, and they may serve to excite the physicians attention

tion to the observation of the other signs, which denote an abscess to be now formed in the lungs.

2. Almost the first sign of an internal suppuration begun is such a vague shivering soon going off and often returning again, but in no certain order, nor from any manifest cause, as, for example, an admission of the cold air, &c. which might occasion it. It would perhaps be difficult for us to assign the cause of this shivering; but it may be sufficient for us, if we are taught from practical observations, that this symptom always attends in this case. Hence Hippocrates observes: ^a *Qui crebro tenuiter exsulant, & superrigent, perniciose habent, ac sub finem empyema habere deprehenduntur, alvosque perturbatas*: “ They who have frequently a
“ thin sweat and afterwards a shivering are in a
“ very bad way, and are found in the end to have
“ an empyema, and a flux from the bowels.” And in another place: ^r *Horrore affecti frequenter ad suppurationem deveniunt. Sed & febris tales ad suppurationem perducit*: “ Those who are invaded
“ with a shivering have frequently a suppuration
“ or empyema following. But then there is a
“ fever which brings on and completes the sup-
“ puration in such patients.” Even Hippocrates ^s seems to judge this of so much importance, when he endeavours to determine accurately the beginning of the suppuration, in order to compute from thence the time when the abscess now formed may be expected to break, that he reckons from the shivering.

Another sign of the suppuration begun is a remission of the pain. For we before demonstrated

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at

^a In Coac. N^o. 10. Charter. Tom. VIII. pag. 853.

^r Ibid. N^o. 422. pag. 877.

^s In Prognosticis Tom. VIII. pag. 649. Et Coac. N^o. 402. ibid. pag. 875.

at §. 382. N°. 3. that pain arises from a distention of the small inflamed vessels, whose least fibres are near upon breaking. But, when by the suppuration begun the extremities of the small obstructed vessels are dissolved (see §. 387.), then the pain which before attended must of necessity be diminished. But this sign alone may deceive one, since we made it appear before that in a peripneumony there is not always a severe pain. Yet Hippocrates * makes mention of this sign in his Prognostics, where he says: *Aut si dixerit, pro dolore gravitatem sibi factam esse in eo, quo dolebat, loco*: “ Or if the patient shall declare that
 “ there is a heaviness instead of a pain in the
 “ part which before ached.”

But it is evident there must be a continuance of the dyspnoea, because the swelling is not removed which impedes the expansion of the lungs in respiration, and that even the dyspnoea will be often rather increased about the time of the suppuration; and from the same cause, the free return of the venal blood from the head being hindered, the lips and cheeks look red, as we explained it before at §. 826. But thirst attends because the body is dried up, and the most fluid part of the humours dissipated by the slow fever which constantly hangs on the patient. For we have already seen (in the comment to §. 403. N°. 1.) that every suppuration is attended more or less with a slight fever. But this fever is generally increased in the evening when the crude chyle from the aliments is moved through the vessels with the blood, and from the action of the lungs weakened in this disease it is not so soon assimilated or subdued, but retains it's own crude nature for a long time before it can acquire all the qualities of our animal humours;
 and

* In Prognost. ibidem.

BUT that a suppuration is already formed in the lungs we may conclude, 1. From the forementioned signs (§. 833. and 834.) having preceded. 2. From a stubborn dry cough, increasing after meals, or upon motion of the body; the respiration being difficult, short, laborious, and rattling, and all these increased after eating or exercise; the patient being able to lie only in one posture, that is, on the affected side: to these are added a continual slight fever, returning at intervals, and increasing with a redness of the cheeks and lips after eating, drinking, or exercise of body; the patient loses his appetite, is very thirsty, and has night-sweats, especially about his throat and forehead; the urine appears frothy and pale;

pale; and the patient falls away, or is emaciated and becomes extremely weak.

That a purulent abscess is formed in the lungs we know, 1. From those signs having preceded, concerning which we treated in the two foregoing sections. But, when such a disorder is present, there will be likewise certain effects appearing either throughout the whole, or about the particular part of the body affected, concerning which, it is our business here to treat.

2. The patient has now a voinica or close abscess in the lungs filled with matter, and by it's bulk compressing all the adjacent soft parts, and therefore, by pressing the sides of the pulmonary vesicles close against each other, they will be continually irritated; from hence arises a stubborn but dry cough, because nothing can be brought up from the affected part, so long as the abscess remains unbroken. For, although by this continual cough there is often some of the mucus brought up which lubricates the internal surface of the lungs, yet it is nevertheless justly called a dry cough; because the spitting is very small, brought up with much difficulty, and as yet none of the matter oppressing the lungs is brought up. But since after a meal the crude chyle passes with difficulty through the lungs, even of healthy people, if there is much of it, or formed from indigestible food, so as to produce a slight fever and difficulty of breathing, it is evident enough that from thence the cause will be increased, from whence the cough arose. The same is also true, when by exercise of body the venal blood is derived towards the right side of the heart with a swifter motion, so as to be pressed through the lungs with a greater celerity, while the vessels of that organ are streightened by

by the bulk of the latent abscess. But this cough is more especially increased when that continual slight fever is periodically augmented, concerning which we shall speak immediately. Hence we see the reason of the following prognostic of Hippocrates : * *Qui autem circa exacerbationes tussunt, & parum exsudant, maligne habent* : “ But “ those who sweat a little and have a cough, about “ the time that their fever has fits of increase, are “ in a bad condition.”

But the respiration will be difficult, short, laborious, and rattling, so long as the vomica or sack full of purulent matter streightens the capacity of the air-vessels of the lungs, so as to prevent them from dilating easily by the inspired air ; but why at that time there is a disagreeable rattling heard in the breast was explained before in the comment to § 826. But that the difficulty of breathing must increase after eating or exercise is evident from what was said before.

When an inflammation occupies both sides of the lungs at the same time, sudden and unavoidable death is to be expected rather than a suppuration (see §. 827.) and therefore the abscess is almost constantly seated in but one side only or one half of the lungs. If therefore such a vomica is of any considerable bulk, when the patient lies on his sound side, the mediastinum will be pressed towards the other side of the thorax, whence the space will be diminished wherein the sound part of the lungs is seated ; and this part of them will then meet with more difficulty in their dilatation by the inspired air : and, since the respiration is already impeded in the other side affected by the swelling vomica, therefore the patient is unable to bear

* Coac. Praenot. No. 114. Charter. Tom. VIII. p. 858.

bear the oppression, and soon changes the posture of his body till he meets with one more easy, which is always observed to be when he lies on the affected side. Hence Hippocrates * observes to us, *Si vero suppuratio fuerit in alterutro latere tantum, & vertere (aegrum) & condiscere oportet in his, num aliquem habeat dolorem in altero latere, & an alterum sit calidius altero, & aegro in latus sanum decumbente interrogare, si quod ipsi pondus desuper impendere videatur. Si enim hoc fuerit, in altero latere suppuratio est in quo pondus adfuerit*: “ But if the
 “ suppuration is formed in one side only, and the
 “ patient turns himself about, one ought to in-
 “ quire of such, whether they have any pain in
 “ the other side, and whether one side is hotter
 “ than the other; and to inquire of the patient
 “ who lies on the sound side, whether he has a
 “ sense of an impending weight above. For, if
 “ this symptom attends, the suppuration is in the
 “ other side where the weight is perceived.”

But since it is a very common thing for the inflamed lungs to grow or adhere to the contiguous pleura, as we shall declare hereafter at §. 843. therefore such an adhesion may happen to hinder the weight of the abscess from pressing so much upon the mediastinum, when the patient lies on the sound side. But then the patient will perceive a troublesome tightness, and often a very sharp pain from the distraction of the parts cohering together, whence likewise he will be obliged to lie on the affected side.

At the same time there is also present that slight fever mentioned in the preceding section, and which physicians have called dhectical or habitual, because,

* In Prognosticis Charter. Tom. VIII. pag. 650.

because, as Galen² tells us, *semper sibi similis, nec invasionem alicujus paroxysmi, nec incrementum, nec vigorem, nec remissionem habet, sic ut se febricitare non percipiat aegrotus*: “It is always alike, having neither fits of invasion, increase, nor height, nor remission, so that the patient cannot perceive himself to be in a fever.” But Galen² in another place allows a periodical increase to these fevers; but at the same time he proves that the exacerbation is not dependent on the nature of the hectic fever, which always goes on in the same tenor; but that it arises from the ingested aliments, which being concocted and distributed then occasion this fever to return to its former height. But why this fever is increased by exercise of body is evident from what we said a little before on the increase of the cough from the same cause. Concerning the redness of cheeks and lips, we treated under the preceding section; where we also spoke of the thirst. But, since an abscess formed in this vital organ disturbs the whole body, and is constantly attended with such an habitual fever, while at the same time all the humours are greatly changed and corrupted by matter attenuated and returned or absorbed, it will therefore not appear surprising that the patient’s appetite is destroyed.

But night-sweats almost constantly attend an abscess of the lungs, as they likewise attend upon those who have a consumption of the lungs with a purulent spitting. For it was demonstrated in our physiology, or lectures on the theory of physic, that the action of the lungs upon the blood serves
among

² Galen. de Praesag. ex. Pulsibus, Lib. III. cap. 3. Charter. Tom. VIII. pag. 281.

² De Febris Lib. I. cap. 12. Charter. Tom. VII. p. 123.

among other uses to make a most exact mixture of all the humours and to give the blood a due degree of density or firmness, as well as to work up the chyle to that perfection which is natural to our healthy humours. But the chyle is always lighter than the blood or it's serum, and therefore the action of the lungs and arteries is to compact the chyle and give it a greater solidity, that is, to reduce more of it's matter into the same or a less space or dimensions. But, when the action of the lungs is weakened by an abscess here formed, the texture of the blood will be rendered less firm, and the mixture of all the parts of the blood with each other will be less intimate or exact. Therefore, when the whole surface of the external skin is fomented by the heat of the bed, the thinnest parts of the blood, from the increased motion of the humours by the continual slight fever, will be expressed in the form of sweat. For it was proved upon another occasion in the comment to §. 753. that, when such a cacochymia takes place in our humours as renders their parts less assimilated and unequally mixed, there then ensues a propensity to sweats from even slight causes. But all these effects will be still more increased, because the matter confined in the abscess of the lungs, being attenuated and absorbed by the veins, will very much increase this cacochymia, and continually dispose the blood to be more inclining to a putrid dissolution. But this sweat will appear chiefly about the throat and forehead, because the pulmonary abscess, impeding the free passage of the blood through the pulmonary artery, will at the same time also prevent the return of the venal blood from the parts above, whence all the vessels of those parts will be more distended, and consequently (*caeteris paribus*) the sweat

sweat will be here more conspicuous, often gathering in drops when the patient is weak ; and this is always of bad presage, as we said in the comment to §. 741.

The urine is almost constantly observed frothy in this case, so that upon shaking it a froth often continues upon the surface for several hours, whereas healthy urine very soon loses the froth which has been raised by a violent shaking : and therefore this urine is bad, because it deviates in its qualities from those of healthy urine. The urine of healthy people is always saponaceous, as the oil being mixed with the more acrid salts of the blood is changed into a soap dissolvable in water ; but, at the same time, all these are so highly attenuated in healthy urine, that it has no ropiness or viscosity capable of maintaining a lasting froth. But as in this disease there is an imperfect assimilation of the humours, and the most fluid and moveable parts of the blood are dissipated in sweats, it is no wonder that the urine thus degenerates so as to resemble an unactive viscid and soapy lixivium. Yet the same sort of urine is observed in other diseases of the lungs, as when, for example, that viscus is stuffed with a ropy viscid phlegm ; and therefore from this sign alone we cannot have a sure knowledge of an abscess being in the lungs, but, if such a urine appears at the same time with the signs before-mentioned it confirms the diagnosis.

But that great paleness, leanness, and weakness must attend here, is evident enough from what we said before : for the blood, being broken or dissolved, from the weakness of the assimilation, causes paleness ; and the night-sweats, wasting hectic fever, and loss of appetite, are the causes of leanness and extreme weakness.

But

But Hippocrates ^b has beautifully collected together the signs of an abscess in the lungs, when he describes it as follows : *At purulentos omnes hisce signis cognoscere oportet : Primum quidem si febris non dimittat, verum interdum tenuis detinet, noctu vero major, & multi sudores oriuntur, (circa collum & claviculam) ; tussendi autem cupiditas illis inest, & nihil effatu dignum exspuunt, oculique cavi fiunt, malaeque rubores obsident, & ungues quidem manuum adunci evadunt, digiti autem incalescunt, maxime summi, & in pedibus tumores fiunt, & cibos non appetunt, & phlyctenae per corpus nascuntur : But*
 “ the physician ought to distinguish all those who
 “ have a suppuration of the lungs by the following
 “ signs : as, first, if the fever does not leave them,
 “ but remains slight in the day time and grows
 “ more intense in the night, and if many sweats
 “ arise, about the neck and clavicles ; ^c but in
 “ such patients there is an inclination to coughing,
 “ though at the same time they spit up nothing to
 “ speak of, and their eyes become hollow or sunk
 “ in, their cheeks flushed with redness, and the
 “ nails of their fingers turn sharp and crooked
 “ while the fingers (or hands) themselves burn
 “ with heat, the feet swell, the patient has no
 “ appetite to food, and ferous painful ulcuscles
 “ arise throughout the body.”

S E C T. DCCCXXXVI.

THIS abscess or vomica being once formed in the lungs (835.) terminates various ways ; as 1. it suffocates the patient when it occupies the whole compass of the lungs

^b In Prognosticis Charter. Tom. VIII. p. 651.

^c Coac. Praenot. No. 402. Charter. Tom. VIII. pag. 875.

lungs by it's bulk, or by compressing them stops up those vessels which as yet remained pervious in that viscus. 2. The vomica may suffocate the patient all of a sudden by the matter bursting forth and discharging itself with violence into the wind-pipe. 3. It often goes off by a purulent spitting, easing the patient, but wasting him at the same time. 4. It terminates by the matter breaking into the cavity of the thorax, or into the dilated space of the mediastinum: and 5. from thence ensue various kinds of pulmonary and purulent consumptions, or an empyema, which commonly prove fatal.

We now come to the various ways of terminating a pulmonary abscess, each of which are to be considered.

1. From what has been said under the two preceding sections, it is evident that an abscess of the lungs, both in it's formation and when already formed, occasions a dyspnoea or difficulty of breathing by impeding the expansion of the lungs which is necessary towards a free respiration. If therefore such an abscess does not break, nor the confined matter return by the veins and discharge itself through other ways, or be translated by a metastasis to some other part, so as to relieve the lungs, it is very evident that this tumor must increase daily till at length it suffocates the patient with intolerable anguish. Hence Hippocrates^d, in treating on this subject, says, *Si vero non*

^d De Morbis Lib. I. cap. 8. Charter. Tom. VII. pag. 541.

non possit multo tempore rumpi, neque sponte, neque a medicamentis, contabescit aeger a vehementibus doloribus, & inedia, & tussi, febris, & plerumque perit: “ But, if in length of time the abscess

“ cannot break either spontaneously or by the
 “ help of medicines, the patient falls away from
 “ the violent anguish, and is commonly destroyed
 “ with a fever, loss of appetite, and a cough.”

The celebrated Boerhaave saw in the body of one who expired of this disease, that the lungs on one side were converted into a sack full of matter of such a prodigious bulk, that it not only displaced the heart from it's proper situation, and compressed the other side of the lungs into a very small compass, but likewise thrust down the diaphragm and made it protrude into the abdomen. But what dreadful disorders must have preceded death in this patient from such a distraction of the parts may be easily imagined. Many more such instances are to be seen in the writers of observations.

2. For if such a large abscess breaks suddenly, so that the matter cannot be discharged slowly and in a small quantity at a time by coughing, but vents itself at once in a violent flood into the wind-pipe so as to fill it, there will be no passage left for the air to be inspired, whence sudden death ensues. Aretaeus * has remarked this fatal event of a peripneumony brought to suppuration, when he says: *Si vero in pulmonem cum impetu pus prorumpat, sunt qui suffocantur, & ob confertam effusionem, & rejiciendi angustiam:* “ But, if the matter
 “ breaks with violence into the lungs, the patients
 “ are often suffocated by the sudden effusion
 “ and difficulty of coughing up the matter.” We have before, upon another occasion, reckoned up
 some

* De Causis & Signis Morbor. Acutor. Lib. II. cap. 1. pag. 11.

some cases which relate to the present, in the comment to §. 786; where we treated of a quinsy proving fatal without any signs of an external or internal swelling.

3. But, when the ripe pulmonary abscess breaks in such a manner that the confined matter can escape into the wind-pipe, in but a small quantity at a time, either from the little quantity there is collected, or from the smallness of the opening in the purulent sack, in that case the disease terminates with a purulent spitting, yet so that the event is always doubtful or dangerous. For thus indeed both the lungs and the patient are sensible of a considerable relief, yet do they not always recover; for to a cure it is necessary for the cavity to be deterged or cleansed, in which the matter was lodged, and afterwards for the sides of it to collapse and grow together. This is well observed by Hippocrates^f, where he treats of a suppurated tumor of the lungs: for his words are, *Et si quidem quam citissime maturuerit, & ruptum fuerit, & sursum vertatur pus, & totum expuatur, locusque cavus, in quo pus, subsidat, & reficitur, prorsus sanus evadit*: “And indeed if the tumor very speedily comes to maturation, and breaks, so that all the matter is discharged upwards by spitting, and the cavity in which the matter lay collapses and dries up, the patient then becomes perfectly well or restored to health.” For, the longer the suppurated part continued shut up, the greater is the quantity of matter collected, and the more it is to be feared that the retained matter rendered acrid by heat and stagnating will corrode the sides of the containing vomica, increase the cavity in which

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it

^f De Morbis Lib. I. cap. 8. Charter. Tom. VII. p. 540.

it is confined, and then after the matter is evacuated the depuration and consolidation of this cavity will be more difficult to effect, which yet are both necessary to a perfect cure. But, if even the pulmonary abscess breaks very speedily, yet is the patient not out of danger, as Hippocrates ^g observes: *Nisi enim penitus resiccare possit, sed ipsum tuberculum ex se pus effundat, perniciosum id est; & a capite & reliquo corpore pituita ad tuberculum defluens putrescit, at pus gignitur ac exspuitur, ob quod perit:* “ For that the case is
 “ malignant or fatal if the vomica cannot be
 “ quite dried up, but the tumor continues to
 “ discharge matter out of itself: for the humours flowing from the head and other parts of
 “ the body to the vomica putrefy and form pus,
 “ which the patient spits up, and by which he is
 “ destroyed:” namely, when almost all the juices of the body flow to the diseased part and are changed into matter, whence the body being deprived of it’s nourishment is dried up and wasted. But the reason why it often proves so difficult to heal up an ulcer of the lungs is very well explained to us by Galen: ^h *Neque enim citra tussim expurgari possunt, illisque tussientibus laceratur locus. Itaque quasi per mutuas operas malum illis in orbem redit; quae namque lacerata sunt, rursus pblegmonen excitant; secundo iterum oportet maturari pblegmonen, & pus expurgari, &c.* “ For these cannot be cleaned without a cough, and in the act of coughing
 “ the parts affected are lacerated, so that the
 “ disorder in a manner increases or produces itself;
 “ for the parts lacerated are again thrown
 “ into a state of inflammation, whence the inflammation

^g Ibidem.

^h Method. Medendi Lib. V. cap. 11. Charter. Tom. X. p. 121.

“ inflammation must come a second time to maturity, and the matter be again cleansed out, &c.” Also from hence we see the reason why this disorder arising from a peripneumony runs out to so great a length of time, when the purulent sack can neither be sufficiently cleansed nor healed, while at the same time the patient’s strength is sufficient, especially in a young person, to hold out a long time under the disease, the matter being discharged by spitting as it is daily renewed. Even Hippocrates¹ has observed that, unless the lungs are soon cleansed in this disease, it holds for a year, changes it’s form, and brings on various disorders. I had myself an opportunity of seeing an extraordinary case of this kind, by which we may learn that the disease may be a long time supported and yet prove fatal in the end. I was consulted by a young man of uncommon parts, who was well in all outward appearance; and, as he concealed the main part of his case from me, I must confess I was not able to discover his latent disorder of body; but he asked me to visit him the next morning, and assured me I should then easily be acquainted with his disease. I attended him accordingly, and upon raising himself up in the bed before me he without much difficulty discharged several ounces of laudable matter by a slight coughing, and religiously affirmed that, for eight years past, he had every day brought up a great quantity of matter, at the least to the weight of four ounces, and sometimes to a much greater quantity. Sometimes his purulent discharge lessened, and he brought up scarce any thing of it; but then there usually followed an oppression at his breast, with

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a very

¹ De Internis Affectionibus cap. 4. Charter. Tom. VII. p. 641.

a very sharp pain and a violent fever; and, after suffering these for a day or two, he usually brought up a great quantity of matter, which would then be very foetid or ill-smelling, after which he would be pretty well for a time. In this manner he informed me he had oftentimes escaped the fatal presage which had been passed upon him by the most skilful physicians, who had been concerned for him; and when, after some weeks I visited him again, after his purulent spitting had been suppressed and followed with the forementioned symptoms, which made me fear the worst consequences, he assured me he should soon be free from his complaints, as indeed it happened. I tried to cure his disease by the vulnerary and mild deterfive herbs boiled in asses milk, and drank in great quantities, with balsamic pills of myrrh, frankincense, sarcocol, riding on horseback, with a proper diet, &c. but all were to no purpose, for, after sustaining the disease for the space of nine whole years without any considerable wasting of body, I was informed he died suddenly about a fortnight after I had made him a visit. I have seen many more who have held this disease a year or two; but all of them were in the flower of their age (as Hippocrates^k observes to us) and they yielded to it at last. In some I have observed the spitting very foetid, and then I understood the reason of the following prognostic of Hippocrates^l: *Quos suppuratos mitius habentes sputorum graveolentiae sequuntur, illos recidiva occidit*: “ That those who
 “ have an abscess of the lungs, and find them-
 “ selves tolerably well, have a relapse which
 “ kills

^k In Prognosticis Charter. Tom. VIII. p. 658.

^l Coac. Praenot. N^o. 406. Charter. Tom. VIII. p. 876.

“ kills them after the spitting has been foetid or
“ ill-smelling.”

But all that relates to the good or bad presage of the event of this disease, in which an abscess of the lungs is terminated by a purulent spitting, is very accurately collected together by Hippocrates^m, and described in the following words: *Superstites evadunt ex his potissimum, quos febris eodem post ruptionem die dimiserit, & qui cibos celerriter appetant, & siti liberati sint; & venter tum exigua, tum compacta dejiciat, & pus album & laeve & ubique ejusdem coloris sit, & a pituita liberum, & citra dolorem & vebementem tussim expurgetur. Sic quidem optime & celerrime liberantur: sin minus, hi, quibus proxima his contigerint. Intereunt vero, quos & febris eodem die non dimiserit, sed quum videtur demisisse, iterum recalescens appareat; & sitim quidem habuerint, cibos vero non appetiverint, & alvus liquida fuerit, pusque ex viridi pallidum & lividum expuerint, aut pituitosum & spumosum. Si haec omnia contigerint, intereunt. At quibus ex his quaedam accesserint, quaedam non, illorum quidam intereunt, quidam etiam multo post tempore superstites evadunt. Verum ex omnibus signis, quae adsunt, tum in his, tum in aliis omnibus, conjecturam facere (oportet):* “ Those chiefly recover who are
“ left by the fever the day after the abscess is
“ broke, whose appetite to food soon returns,
“ and who are free from thirst; whose stools are
“ small and hard, whose purulent matter ap-
“ pears white, smooth, and uniformly of the
“ same colour, free from flegm, and brought up
“ without pain or violent coughing. Those under
“ these circumstances are the most effectually and
“ speedily freed from the disorder: and next to
X 3 “ such

^m In Prognosticis ibidem. p. 653.

“ such are those who come nearest to the like
 “ circumstances. But those perish whose fever
 “ does not leave them on the same day, but,
 “ when it seems to be gone off, returns again
 “ with fresh heat ; and such are thirsty, have no
 “ appetite to their food, their stools are loose,
 “ and the matter spit up is either of a pale-green
 “ or leaden colour, or else phlegmatic and
 “ frothy. If all these signs concur together, the
 “ patient is past recovery. But, in those who
 “ have only some of these signs without others,
 “ some of them die, and others recover, after a
 “ long time sustaining the disease. But in all
 “ these sorts of patients one ought to form
 “ the presage from all the signs which appear
 “ together.”

4. Here we have another way of terminating
 a purulent or suppurated peripneumony, namely,
 when the abscess breaking discharges it's matter,
 not into the trachea, but into the cavity of the
 breast ; and this commonly with a fatal event,
 since there is hardly ever any passage afforded
 here for the matter to escape, unless one is made
 by the surgeon's art, in performing the paracen-
 tesis of the thorax. But, since the lungs being
 inflamed often adhere to the contiguous parts,
 such an abscess breaking may pour out it's matter
 into the cavity of the pericardium, as also in-
 to the dilated space of the mediastinum. In
 what manner the mediastinum is formed of the
 membrane of the pleura investing the cavity of the
 thorax in each side, forming a double lamella, was
 explained before upon another occasion, in the
 comment to §. 170. N°. 4. but before under
 the sternum, and behind about the vertebrae of
 the thorax, those two lamellae which constitute
 the mediastinum depart or are distant from each
 other,

other, and the cellular membrane placed betwixt them is very easily dilatable, whence the matter here poured out may often make itself wonderful passages. But we know that the peripneumony ends thus when, after all the signs of a formed abscess preceding, there is no matter evacuated by spitting or otherways, nor any translation made of it upon another part; and yet the patient perceives sudden ease, *quia pus ex angustia in ampliore locum venit*, “because the matter escapes from a narrower and passes into a larger place”; which sign is also mentioned by Hippocrates^o in other places of his works. He seems also to have remarked^p that sometimes such an abscess breaking a part of the matter is evacuated by spitting, but much the greater part falls down upon the diaphragm. Nor does he seem to hope for much in such a case by extracting the matter through an aperture made in the thorax; for he says^q: *Siustus vel seclus fuerit, & pus exeat, confestim sane hoc etiam modo levius habere videtur, progressu tamen temporis ab his, quae in priori dicta sunt, perimitur*: “If an opening is made into the thorax either by the caustic or incision, and the matter that way extracted, the patient indeed seems immediately to be relieved by this method, but some time afterwards he is taken off by the complaints before mentioned.” But concerning the signs by which we know matter poured out of an abscess to be contained in the cavity of the thorax we treated before, partly in the history of wounds

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in

^q Hippocrat. de Morbis Lib. III. cap. 15. Charter. Tom. VII. p. 592.

^p De Morbis Lib. II. cap. 16. Ibid. p. 568. & de Morbis Lib. I. cap. 8. Ibid. p. 541.

Ibidem.

Ibidem.

in the thorax, and partly we shall treat of them hereafter, when we come to speak of an empyema.

But, what wonderful passages the matter coming from a broken abscess of the lungs sometimes makes to itself, we may learn from many practical observations, of which it may not be improper to repeat a few here. But we shall not in this place consider that way by which matter long confined in a close abscess, attenuated and absorbed by the veins, is afterwards deposited upon various parts or evacuated from the body by various outlets, concerning which you may see what was said before at §. 406. but we shall here treat only of those observations which inform us of matter corroding the adjacent parts and procuring to itself unusual passages. In the body of a man deceased of a suppurated peripneumony, the lungs were found adhering strongly to the pleura and diaphragm, and at the same time the matter, though part of it was evacuated by spitting, had corroded the diaphragm and liver itself to the depth of an inch, and made itself a purulent sinus in that viscus, of three inches diameter^r. In another man after death was found an abscess of the lungs whose matter had eat through the contiguous and adhering diaphragm and stomach itself with so large an opening that it would easily admit the thumb^s. A case of this nature is related by Jacotius^t of a woman, *quae quibusdam ante mortem annis vomitu solebat per intervalla rejicere magnam puris copiam cum defectione animi, vocis privatione, & gravibus aliis symptomatibus,*

^r Medical Essays Tom. I. p. 273.

^s Ibid. Tom. II. p. 332.

^t Holler. in Comment. in Coac. Hippocrat. p. 27.

matibus, quibus levabatur a vomitu. Mortua & dissecta, ingens vomica in pulmone reperta est:

“ Who some years before her death was accustomed at intervals to vomit up a great quantity of purulent matter, with fainting, a loss of speech, and other violent symptoms, whereby her vomiting was relieved. When she was dead and opened, a large vomica or abscess was found in her lungs.” A man afflicted with an ulcer of the lungs had a tumor appeared whenever he coughed, which was as large as a small hen’s egg, and seated betwixt the ensiform cartilage and the edge of the cartilage of the last true and of the two upper spurious ribs; but after his death an abscess of the lungs was found in this place large enough to distend the diaphragm and form their tumor^u. More instances of the like kind are to be found in authors of the best repute; but those here mentioned may suffice to demonstrate that purulent matter poured out of a broken abscess of the lungs may produce wonderful disorders by corroding or distending the adjacent parts.

5. When an ulcer has so corroded the lungs that the whole habit of the body is thereby wasted, a pulmonary consumption is then said to attend (see §. 1196.) whence it is evident that an abscess of the lungs inclines towards a consumption. But an ulcer of the liver or other viscera may likewise produce a purulent consumption, as we shall declare hereafter at §. 1214: and, since it appears evident from what was before said that the matter collected in the lungs may by a metastasis or an erosion be transferred to other viscera, the reason is thence evident why various
forts

^u Memoirs de l’Academie de Chirurg. Tom. I. p. 717.

forts of phthifis may be expected from a suppurated peripneumony.

But when the matter from a broken abscess is collected betwixt the lungs and pleura, and forms an empyema, it is almost constantly fatal. When we come to treat of an empyema hereafter, it will appear that this disease is always dangerous; and that there then only remain hopes of a recovery when by an aperture timely made into the thorax there is discharged a white, mild, and uniform matter free from a stinking smell, while the patient appears healthy in other respects; (see §. 1192.) But in this case the lungs are already corroded with an ulcer, before the empyema is formed; and therefore it is evident but little hopes remain.

S E C T. DCCCXXXVII.

A Peripneumony terminates also in another disease when the inflammatory matter being come to suppuration (§. 832, 833, 834.) is taken up again by the small pulmonary veins, mixed with the blood and then deposited upon some certain part; so that the lungs are thus set at liberty, but the matter is loaded upon some other member; which if it be not very necessary to life, the metastasis or translation of the matter is said to be good; but, if it settles upon the liver, spleen, brain, or the like important viscera, the event will be commonly the most fatal. Hence peripneumonic patients have abscesses formed behind the ears, upon the legs, upon the sides of the belly, &c.

Another

Another manner, in which a peripneumony changes to a different disease, is that which is made by a translation of the morbid matter to some other part of the body. But this takes place when the inflammatory matter is already become purulent and is not evacuated either by spitting, a flux from the bowels, or by urine; (see §. 830.) nor yet accumulated in the lungs, so as to form a vomica, but being drunk up by the small pulmonary veins is afterward deposited upon some certain part of the body. For it is to be here observed, that, properly speaking, such a good and salutary translation cannot succeed when the collected matter is lodged in the substance of the lungs, so as to form an abscess; but it can only happen when the inflammatory matter is concocted and rendered moveable, so that it may pass from the obstructed arteries into the veins, after having acquired the nature of pus or matter, and while the vessels remain intire at the same time; since it appears that true pus, together with the obstructing inflammatory matter, being ground with the other humours into one uniform liquid, pass together through the extremities of the obstructed vessels. See what has been said upon this subject in the commentaries to §. 598; as also at §. 830. No. 2. where we treated of a spitting, by which that matter is evacuated in a peripneumony, which being here translated to other parts of the body forms various abscesses. Hence also, though the matter is called purulent in the text, yet those Aphorisms are referred to which treat of a future suppuration or one only beginning; and not any one of the following numbers, where the signs and effects of an abscess already formed are explained. For the same reason likewise, as will be

be made evident hereafter at §. 842, those abscesses are approved as useful which happen speedily, before the ninth day ; for after that time there is just reason to fear an abscess is actually formed in the lungs, since it is usually completed within fourteen days, as we explained it at § 832. But, although the matter contained in a vomica of the lungs should be absorbed by the veins, and be deposited by a metastasis upon some other parts of the body, yet when this is done the ulceration will continue in the lungs, whence new matter will in a short time be collected again in the same place; and therefore no great benefit can be expected from such a translation of the matter. But when the inflammatory matter, being subdued and rendered moveable, passes on into the veins, before an abscess is formed, and mixing with the blood is afterwards deposited upon other parts of the body, the lungs may by that means be freed from the disorder, and, when once freed, they may enjoy the same state which they had in health. For this reason those abscesses are condemned (§. 842.) which appear after a purulent spitting is formed ; and it is also observed, that they are then of no service towards relieving the patient ; namely, because they then only relieve the lungs of their present matter, while the cause is remaining which will occasion a speedy regeneration of the like matter. It seemed necessary to premise these particulars, the better to understand what we have further to advance concerning these abscesses in the following paragraphs.

In this case therefore the lungs are set at liberty, and other parts of the body are loaded with the matter, which is translated to them from its first seat fixed in the lungs. It was said upon another occasion in the comment to § 402. that the term

abscess

abscess is used in various senses by the antient physicians; and we also there remarked that they made principally a twofold distinction of abscesses, namely, into those (κᾶτ' ἐκρυσιν) by efflux, and those (κᾶτ' ἀπόθεσιν) by deposition of the morbid matter upon some certain parts of the body. But, since by an efflux of the morbid matter the body is intirely freed from the distemper, and by a deposition of it on other parts there is only a change into another disease, therefore Galen * deservedly pronounces the former to be more and the latter to be less useful; and that these last are only useful when they happen in parts which are less principal, and the most remote from those first affected. For it is evident enough, that the good or bad event of such an abscession must depend upon the nature of the part upon which the matter of the disease settles by a translation from it's first seat. For, if the matter flows to the liver, spleen, brain, &c. all the very worst consequences may be expected: for in the brain it usually occasions sudden death; in the other viscera, it causes purulent abscesses which are very difficultly if at all curable, unless by good fortune the matter deposited on these parts is speedily expelled from the body. But such abscesses are more especially observed in peripneumonic patients about the ears, thighs, and hypochondria; concerning each of which, we shall treat separately.

But in the first place are enumerated, in the following section, those signs which denote that a peripneumony inclines to such abscesses. The next point to be considered will be by what signs those parts of the body may be discovered, towards which there is a tendency of this translation and deposition.

* In Commentar. 3. in Lib. I. Epidem. Hippocrat. Charter. Tom. VIII. pag. 85.

deposition. And then, finally, we shall see what means are required to render those abscesses salutary.

S E C T. DCCCXXXVIII.

THAT such abscesses are about to happen may be known, 1. By an observation of the signs of a peripneumony, not of the worst kind (§. 833, 834.) with a continual fever that is neither violent nor malignant; yet attended with a pain of the breast, anxiety, oppression, and difficulty of breathing, but these not in the worst degree; and if there are no signs of a resolution (§. 830.) 2. If the pulse, together with these signs, be constantly and in all respects wavering or variable. 3. But more especially if there is pain, redness, heat, and tension about the forementioned parts (§. 837.)

But to foresee future abscesses more especially requires a careful attention, lest the physician being ignorant of these should unseasonably by his art disturb the metastasis which is now about or already begun to be formed; and that, by foreknowledge of them, he may apply such things (to those parts which may without danger be occupied by these abscesses) as sollicit the matter that way and render those parts less resisting, as we shall hereafter declare at §. 860.

1. A mild resolution may be expected without any evacuation of the morbid matter, in the slightest peripneumonies, attended with the most safe signs, or at least there may be a metastasis of
the

the matter to other parts ; but it can hardly be hoped that those which are of the worst kind, and attended with the most violent symptoms, should terminate in health : whence it is evident, that the change of a peripneumony into another disease can be only expected when it is observed to be neither very mild, nor most violent, but of an intermediate degree betwixt those extremes.

In such a peripneumony there is a fever, neither very violent nor joined with malignant symptoms, yet it is continual, because the matter of the disease is not yet subdued. But all the symptoms remain, which usually attend in this inflammation ; though they do not threaten a fatal event by their too great violence, by all these circumstances therefore, we know that the inflammatory matter as yet occupies it's first seat, and is in the mean time subdued and concocted by the continual fever of a mild disposition (see §. 587.) and that thus the matter is very well disposed either for excretion or translated. But now, when at the same time there are no signs of resolution, and in the spittle, stools, or urine (see §. 830.) there are none of those appearances which usually denote the matter of the disease to be subdued or rendered moveable by the fever, and disposed for a discharge by those passages, there is then the greatest reason to expect a translation upon other parts. All these signs are accurately collected together by Hippocrates ^y, when he says : *Si febris detineat, neque dolor sedatus sit, neque sputum ex ratione procedat, neque biliosae alvi dejectiones sint, neque solutu faciles, neque sinceræ fiant, neque urina admodum multa, & crassa & copiosum habens sedimentum ; observatur autem superstes futurus ab omnibus reliquis salutaribus signis : his oportet tales abscessus futuros sperare* : If the fever

^y In Prognosticis Charter. Tom. VIII. pag. 654.

“ fever stills holds the patient without a cessation of
 “ the pain, if there are no signs of concoction in
 “ the spittle, if the stools be neither bilious,
 “ loose, nor as they ought; the urine neither
 “ much in quantity, nor thick or charged with a
 “ sediment; but it appears from all the other
 “ salutary signs that the patient will survive; in
 “ these cases we ought to hope for such future
 “ abscesses.”

2. For such a pulse denotes that the morbid matter, being subdued and rendered moveable, does now flow with the blood through the vessels; and that therefore an abscess is to be expected, if there does not appear a sudden evacuation of the said matter. For it must be remarked, that the other good signs concur with such a pulse in this case; otherwise a pulse, continually and much wavering in all it's circumstances and attended with bad signs, does rather denote death. For since the matter of the disease has now left it's first seat, and the obstacle impeding the free course of the blood through the lungs is now diminished, therefore the pulse will become fuller and larger. (see §. 830. No. 2.) although it be continually wavering. Hence Galen² gives us the following admonition: *Verum tamen si cum vehementia pulsus fiat aliqua ordinis perturbatio, sive aequali sive inaequali existente vehementia, quum & apparuerint signa coctionis, sperandum est, aliquam crisin futuram, & magis, si adhuc alia crisis signa fiant:*
 “ But indeed if the pulse being strong, is never-
 “ theless disturbed in it's order, whether it be
 “ equal or unequal provided it be strong, and
 “ if the signs of concoction appear, there is rea-
 “ son to hope for a future crisis, and the more if
 there

² De Praeagit. ex Puls. Lib. II. cap. ultimo Charter. Tom. VIII. p. 153.

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“ there are still other signs apparent of a crisis.”
See also what has been said concerning critical disturbances in the comment to §. 587. and §. 594.

3. For all these symptoms teach us, that the matter of the disease, being dissolved and moved with the blood through the vessels, is now deposited towards the parts which are painful, red, &c. and therefore from the concurrence of these we have a perfect knowledge of such a critical translation. Hence Hippocrates^a tells us (as we observed in the comment to § 587.) *Quibuscumque ex morbis resurgentibus aliqua pars doluerit, illic abscessus oriuntur*: “ All those who in recovering from fevers have some certain part of the body painful, have abscesses formed in those parts.”

S E C T. DCCCXXXIX.

BUT that these abscesses will be formed about the legs we know, 1. If the signs (§ 838.) of future abscesses attend. 2. If at the same time with them there are also the signs of a slight inflammation about the hypochondria.

Among such abscesses as terminate a peripneumony, those seem to have the first place given them by Hippocrates which are formed about the legs. For he says: ^b *At abscessus, qui ad crura fiunt peripneumoniis tum vehementibus, tum periculosis, omnes quidem utiles*: “ But the abscesses which are formed about the legs, even in violent and dangerous peripneumonies, are indeed all-
VOL. VIII. Y “ ways

^a Aphor. 2. Sect. IV. Charter. Tom. IX. pag. 153.
^b In Prognostic. Charter. Tom. VIII. p. 656.

“ways of service.” But these are foreseen to be about to happen by the signs following.

1. Of these we treated at §. 838.

2. For we have seen that the matter of the disease, dissolved and rendered moveable, yet remains so conditioned that it cannot move through the vessels with the other humours, without disturbing the equable circulation; whence it must be either expelled from the body, or else be deposited upon some other parts as we said before. But Hippocrates^c observes to us, that there are two ways which this matter inclines to take, namely, either to the upper or lower parts of the body. When therefore this matter is moved with the blood through the branches of the descending aorta, a great part of it will be conveyed, both by the coeliac and mesenteric artery, through the chylicative viscera, and, from thence passing into the vena portarum, it must make it's way through the narrow vessels of the liver; in which organ we know the passage of the humours is proportionably always more difficult, as the venal blood must pass on through the narrow ends of converging vessels, without being assisted by the impelling force of the heart. It will therefore not appear wonderful if from hence an obstruction arises about these parts, and is followed with the signs of a slight inflammation. Now whether this be the genuine cause of the symptom observed, or whether it be from some other less known cause, it is sufficient for the physician that he is assured this presages a future abscess about the legs. But the signs ought to be only of a slight inflammation, and soon vanishing again; for, if they continue, there will be rather occasion to fear the morbid matter will be collected in the liver, with
more

Sect. 839, 840. Of a true Peripneumony. 323

more dangerous events. This has been well remarked by Hippocrates, ^d when he tells us, that abscesses are to be expected about the legs, *si circa hypochondria aliquid inflammatorii adfuerit*: (ἂν περὶ τὰ ὑποχόνδρια τὸ φλέγματος τι ἐγγίνηται) “if there “is any thing of phlegm or inflammation attends “about the hyhochondria.” But Galen ^e well observes to us that by τὸ φλέγμα we are not to understand a phlegmatic humour, but an inflammation; and we observed before in the comment to §. 69. this term is sometimes used to signify an inflammation or phlegmon. This is still further confirmed by another passage in Hippocrates ^f where we meet with the same prognosis concerning a future abscess in a peripneumony, and where we tread *phlegmon* instead of *phlegm*.

S E C T. DCCCXL.

BUT we foresee abscesses will happen about the ears, 1. If the forementioned signs (§. 838.) attend; 2. If the hypochondria are soft or without swelling.

It was proved before in the comment to §. 416. that those abscesses which are formed about the ears, either in health or disease, are called *parotides*; and many other particulars to be observed were mentioned in the comment to §. 741. But that an abscess will be formed towards the upper parts of the body we know from the presence of the general signs of abscesses, and especially, *si hypochondrium molle & doloris expers apparuerit*;
Y 2
& quum

^d. Ibidem.

^e Comment. 2. in Prognostic. ibidem.

^f In Coacis N^o. 395. Charter. Tom. VIII. pag. 874.

Et quum difficultas spirandi, per aliquod tempus facta, citra aliam evidentem causam quieverit: “ If the
 “ hypochondria appear soft and free from pain;
 “ and if the difficulty of breathing, which has
 “ continued for some time, ceases without any
 “ other manifest cause.”^z For we know by these
 signs, that the matter of the disease has changed it’s
 place; but this is without being evacuated, and
 without a translation to the lower parts, and there-
 fore no place remains for it to move to but upwards,
 to be deposited about the parotid glands, according
 to the usual course of nature in her curing diseases
 by metastasis. It is indeed true that parotides are
 sometimes formed in diseases when the hypochon-
 dria are affected at the same time, but they are
 then always dangerous, as they denote so great a
 quantity of the morbid matter that it cannot be
 all received by these parts; or at least in this case
 the salutary endeavour of nature does not succeed,
 by which she attempts to deposit the morbid mat-
 ter where it can do little or no mischief, and the
 viscera at the same time suffer from the transla-
 tion of the matter. Hence Hippocrates^h pro-
 nounces those abscesses about the ears to be malig-
 nant, which are formed while pains attend in the
 hypochondria; and a little after he observes:ⁱ
Anxietatem in hypochondrio sentientibus tumores circa
aures ortos mortem inferre: “ That tumors arising
 “ about the ears in those who have pain or an-
 “ guish in the hypochondria presage death.”

^z In Prognosticis Charter. Tom. VIII. pag. 655.

^h Coac. Praenot. N^o. 285. *ibid.* pag. 868.

ⁱ *Ibid.* N^o. 303. pag. 869.

S E C T. DCCCXLI.

THAT the matter inclines to be deposited upon the liver we know,
 1. If the forementioned signs (§. 838.) attend. 2. If a pain continues in the liver, and the urine appears as in a jaundice, with a yellowish colour of the skin. From hence often follows a vomica or corruption of the liver, with the very worst consequences.

It was said at §. 839. that, when the matter of the disease inclines to the lower parts of the body, it produces the signs of slight inflammation in the hypochondria; and therefore there is evidently some danger, lest by meeting with a difficult passage through those viscera it may be collected in them and form an abscess. But more especially in the liver we may have reason to fear an abscess from this cause, for the reasons before given. But we know that the matter thus takes a turn to the liver, when, after the general signs of a future abscess having preceded, there is a pain felt in the liver, which does not soon go off (like the pain from abscesses in the legs) but continues. The other signs of an abscess forming in this viscus are taken from the injury of the functions which are peculiar to the liver, namely, the secretion and excretion of the bile. For, when the liver is obstructed or inflamed, the bile returns back again into the blood and tinges the skin and urine of a yellow colour; but of this we speak more largely, when we come to treat of inflammation in the

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liver

liver at §. 914. But unless the inflammatory matter thus translated to the liver finds a passage through the excretory ducts of the vena portarum, so as to flow into the cavity of the intestines and be expelled by stool; or if it does not return through the branches of the cava and be deposited upon some less dangerous part, or be expelled by other passages from the body; it will make a vomica or abscess of the liver, from which the patient very seldom recovers, as we shall demonstrate hereafter at §. 936. and the following. Now, as in this manner a metastasis or translation of the matter is made to the liver, so the like may be easily conceived to happen also to the other viscera; in which, the injured functions will point out the part affected; and the prognosis will be different, according to the different nature of the viscera wherein the matter takes up it's residence. Therefore those abscesses only are to be commended, which are formed in the more outward parts of the body; and these, as we are taught by practical observations, commonly take place about the ears, or else in the lower extremities; but seldom or never in other parts of the body in this disease.

S E C T. DCCCXLII.

IF those abscesses (§. 839, 840,) relieve the lungs, if they remove the fever, and suppurate, discharge their contents, or continue fistulous, they are always salutary, provided they take place soon enough, before the ninth day: but they are bad when they arise without affording the said relief, or if the spitting is once become purulent, or when it

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no longer appears yellow and concocted; but, if these abscesses vanish after they have once appeared, and this in the first or crude stage of the disease, being followed with a return of the peripneumony, they are then every way fatal.

But it appears from what was said at §. 587, concerning a crisis, and critical evacuations with abscesses, that sometimes nature endeavours to effect these in diseases, and is not able to accomplish them; whether this be through the weakness of the patient's strength, or from the malignant or stubborn nature of the morbid matter, or some error in him who undertakes the cure, &c.

But the first sign here of abscesses being good, is, if they relieve the lungs. For, since that morbid matter ought to be collected in these abscesses, which being a little before seated in the lungs occasioned the peripneumony, it is therefore evident enough, that, when those abscesses appear, they ought immediately to relieve the lungs. But this relief is known from the improvement in the patient's breathing, and from the pulse becoming larger and fuller; as is evident from what was said at §. 830. N^o. 2. But it is likewise evident, that at the same time the fever ought to be removed or at least to be greatly diminished; since now the material cause which produced the fever, either by way of obstruction or stimulus, is not only concocted or subdued, but has likewise removed from the part which it first affected, and, being separated from the circulating humors with which it mixed, is collected in a part less dangerous. But since it is requisite intirely to depurate the blood by these ways, from all the morbid

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matter

matter which flowed with it through the vessels; therefore it will be convenient for these abscesses to continue open for some time, that they may discharge a large quantity of the purulent humour, even though they usually turn fistulous from the new matter which continually drains thither, and prevents the sides of the hollow abscess from closing or touching and uniting together. Hence Hippocrates^k tells us: *Quibuscunque ex peripneumoniacis morbis abscessus fiunt circa aures, & ad inferiores partes suppurantur, & fistulum faciunt, hi superstites evadunt*: “ Those patients who have abscesses formed about the ears in peripneumonic diseases, and who have a suppuration in the lower parts turning fistulous, such recover from the disease.”

It is moreover requisite for these abscesses to be formed soon enough, before the ninth day: for, if they happen later, there is reason to fear that a vomica is by that time formed in the lungs, from whence the matter being absorbed may be deposited upon other parts, and produce abscesses; but then the ulceration now formed will continue in the lungs, which is always dangerous. See what has been said on this subject at §. 837. From all these particulars, we foresee salutary abscesses.

But, on the other hand, these abscesses are bad and useless if they appear without relieving the lungs: the reason of which is evident from what we have just now observed. Those abscesses are likewise to be suspected which arise when the spitting is once become purulent, or when it no longer continues yellow. It was said, in the comment to §. 830. N°. 2. concerning a laudable spitting, that it cured a peripneumony without any disease following; and then we also remarked, that this
spitting

spitting is first yellow mixed with small particles of blood, and that it soon after changes into a white mild matter, which then very much resembles pus, though we demonstrated that it does not really deserve the name of pus ; since, notwithstanding it is formed of the inflammatory matter concocted and dissolved, yet the continuity of the vessels still remains wherein it formed the obstructions. Therefore, so long as the spitting continues yellow, there is no danger of a vomica beginning to be formed in the lungs ; but when the disorder advances further, and is once become purulent, and yet is not discharged plentifully and freely enough to relieve the disease, there is then just reason to fear a vomica is formed or at least forming, and then little good can be expected from abscesses. Hence Hippocrates ¹ very justly observes to us : *Optimos esse abscessus, qui fiunt dum sputum jam in mutatione est* : “ That those abscesses are
 “ best which are formed while the spitting is now
 “ upon the change ;” namely, while it is beginning to turn from a yellow to a white colour, but is not as yet really of a purulent nature. But he soon after subjoins the following sentence : *Si enim tumor & dolor oriantur, dum sputum ex flavo puri simile fit, ac foras prodeat, ita securissime & homo superstes evadet, & abscessus citra dolorem citissime sedabitur* : “ For, if pain and swelling arise while
 “ the spitting changes from a yellow to the re-
 “ semblance of pus, and continues to be so dis-
 “ charged, the patient by that means escapes all
 “ danger by recovering from his disease, and the
 “ abscess is very soon cured without pain.” For the matter of the disease, being mild, fluxile, and well concocted, denotes all these particulars. But it must be observed, that oftentimes a spitting is of service,

¹ Ibid. pag 656.

service, when these critical abscesses are as yet to be shortly expected; because the spitting is not copious enough to evacuate the matter of the disease, but only affords a sign how far the morbid matter has been changed and concocted. Hence, when Hippocrates^m reckons up the signs of future abscesses, he does not say, that no spitting is then formed, only that it is not formed or discharged (*κατὰ λόγον*) according to reason; that is, not in such a quantity as is necessary to make us hope that the matter of the disease will be that way expelled. For the same reason likewise, he does not pronounce the urine to have no sediment, but only saysⁿ, that the urine being copious and turbid is of no service, &c. But that Hippocrates did attend to the urine and spittle even at the time when abscesses were actually breaking out, and that he derived his prognostics from thence, appears evidently from another place^o where he gives the following sentence: *At si sputum non probe excernatur, neque urina bonum sedimentum habere videatur, periculum est, claudum fieri articulum, aut multum molestiarum exhibiturum*: “ But, if the spitting is not
 “ well discharged and the urine does not seem to
 “ have a good sediment, there is danger that a
 “ joint will be lamed, or that many troublesome
 “ symptoms are about to appear.”

But, when these abscesses being once formed vanish again, the greatest danger attends. For we observed before, in the comment to §. 741. from Hippocrates, *Judicatoria enim non judicantia, partim letalia esse, partim difficilis judicii*: “ That critical signs not terminating nor relieving the disease are partly fatal, and partly denote the difficulty or slowness of the crisis.” For then the morbid matter continues in the body, and flowing

^m Ibidem pag. 654. ⁿ Ibidem. ^o Ibidem pag. 656.

ing towards the inner parts acquires it's former seat where it produces a peripneumony almost constantly fatal, or else, being deposited upon the other viscera, it makes a very dangerous metastasis. Hence Hippocrates ^p tells us : *Si vero dispareant abscessus, & recurrant, sputo non prodeunte & febre obsidente, grave : periculum enim est, ne deliret & intereat homo* : “ But if the abscesses disappear and “ return again, while the fever rages and the spitting affords no relief, it is a very bad sign ; for “ there is danger lest the patient should be delirious and perish.” Where it ought to be remarked, that he says, *while the spitting affords no relief* ; for thus he seems to intimate that, though the critical abscesses return, there are some hopes remaining that the matter may be evacuated by spitting, which before produced the abscess. This seems also to be confirmed by another text : ^q *Tussiculæ cum sputatione parotidem evacuant* : “ That “ slight coughs with a spitting discharge swellings “ under the ears.” But in his Coan Prognostics the term *soften* is read instead of *discharge*, which turns almost to the same account ; since, when the distending matter of a turgid abscess is lessened, it becomes more soft and flaccid. Thus also it was observed in the comment to §. 587. and §. 593. that much thick and white urine frees the patient from a critical abscess. It is therefore always dangerous for an abscess to vanish after it is once formed ; and altogether fatal if the morbid matter is not expelled from the body by some other evacuation immediately following.

^p Ibidem pag. 657.
Tom. VIII. pag. 807.

^q Prorrhetic. Lib. I. Chapter

S E C T. DCCCXLIII.

A Peripneumony again terminates in a callous or scirrhus tumor of the lungs, if the matter and circumstances of the case are conformable to § 392; and from thence the patient is troubled all his life-time with a difficult and upright breathing, which increases with a coughing after meals or exercise of body, and this without the signs of a latent vomica described at (§. 835.) from this distemper likewise the lungs adhere or grow to the pleura.

We come now to consider another way in which the inflammation goes off; namely, when the inflammatory matter is neither dispersed by a mild resolution, nor attenuated and rendered moveable so as to pass off by urine, spitting, &c. nor yet deposited by a metastasis upon other parts of the body nor separated by abscess or suppuration, but continues blocked up in the vessels, and growing to their sides forms with them a callous or scirrhus tumor. But we have already seen upon another occasion, in the comment to §. 112. No. 1, that a callus is said to be an increased bulk of a membranous part with hardness and insensibility, from a concretion or closing up the vessels among themselves. And, although scirrhi do principally arise in glandular parts, yet that scirrhus remains are sometimes observed in other parts, after an inflammation ill treated, appears from what was said in the comment to §. 485. A viscid and atrabiliary indispotion of the blood may give

give rise to the present disorder; as also when the vital circulation of the humours is so languid in a peripneumony, after blood-letting often repeated, that it is neither sufficient to dissolve and expel the inflammatory matter, nor separate it by suppuration. I have several times seen scirrhus lungs in dead subjects; and a great number of such instances may be found in medical history. Schenckius[†] relates a case of the lungs having it's lobes hardened into stony tophes or knots. A remarkable case also of scirrhus lungs was mentioned at §. 797. where we treated of a scirrhus quinsy.

But, when a considerable part of the lungs is hardened into a scirrhous or callus, it is evident enough that such a part cannot be expanded by the inspired air; since such an indurated part cannot give way, but will by it's bulk compress or streighten the adjacent parts; and therefore the respiration will be difficult, only capable of being performed with the neck almost upright, whence it is called *orthopnoea*: and, while such patients are endeavouring with greater efforts to expand the lungs, these indurated and callous parts rubbing against those which are adjacent usually excite a slight cough which is dry and troublesome. But all these complaints are increased when after a meal a great quantity of crude chyle must be transmitted through the lungs which are now less capable of expansion; and they will likewise increase when by exercise of body the course of the blood through the lungs is accelerated. But how difficult it is to cure a scirrhous, even in external parts of the body, where all artificial means may be immediately applied

[†] Lib. II. p. 229.

applied to the affected part, we have already seen in the history of a scirrhus. Hence the reason is evident, why when this disorder is once formed it continues all the life-time, and occasions the fore-mentioned symptoms. Such a callous hardness of the lungs has been of old observed by Hippocrates^u, who gives us also the following remark : *Atque, interceptis a callo transitibus, velox & difficilis spiratio corripit; quum hi spiritum neque per hanc viam emittere, neque facile attrahere queant. Ex talibus sanè hi morbi oriuntur, quales sunt asthmata & tabes siccae :* “ But, the passages being
 “ blocked up by a callus, the patient is invaded
 “ with a quick and difficult respiration; since he
 “ can neither draw in his breath with ease, nor
 “ throw it out with ease by those passages.
 “ From these callosities arise such diseases as asth-
 “ mas and dry pulmonary consumptions.”

But we know such a disorder of the lungs is present, if after a peripneumony the foresaid symptoms remain; and if in the mean time there are no signs of a latent vomica in the lungs. For a vomica that is filled with a collection of matter or pus does likewise occasion such a difficulty of respiration, &c. and also makes an increase of the symptoms after meals, or exercise of body. But a vomica daily increases in bulk until it breaks; whereas a scirrhus hardness of the lungs continues a long time in the same state, and from thence the diagnosis of it may be evidently enough derived.

But the adhesion of the lungs to the pleura may be likewise foreseen from their inflammation. For the most thin vapour which breathes out of the smallest arteries opening in the surface of the
 lungs

^u Lib. De Ossium natura cap. 8. Charter. Tom. IV. p. 6.

lungs and pleura prevents these parts from growing together, when they become contiguous with each other: but when part of the lungs or pleura is inflamed it is rendered dry and imperspirable, whence an adhesion easily follows. Observations without number assure of such adhesions of the lungs to the pleura, being found after a peripneumony or pleurisy. In the oxen kind (which are animals frequently invaded with a peripneumony, called by the Dutch farmers the lungs-fired) the butchers very frequently find the lungs most firmly growing to the pleura, and by repeated practice are assured that then the animal has formerly had such a disease. But likewise a concretion of the membranes together in the more outward parts of these animals has been observed from those causes which are most apt to produce an inflammation. Such a kind of disorder is described by Columella * in the following words: *Est & infesta pestis bubulo pecori, coriaginem rustici appellant, cum pellis ita tergori adhaeret, ut apprehensa manibus deduci a costis non possit. Ea res non aliter accidit, quam si bos aut ex languore aliquo ad maciem perductus est, aut sudans in opere faciendo refrixit, aut si sub onere pluvia madefactus est:* “ There is also a disease infesting the
 “ oxen or other horned cattle, country people
 “ call it hide-bound, which is when the skin so
 “ adheres to the flesh that upon being taken into
 “ the hands it cannot be raised or pulled from
 “ the ribs. This accident happens only when the
 “ beast is by some weakness or fatigue reduced
 “ to be very lean, and catches cold after sweating
 “ at his labour, or when he is wetted by the
 “ rain while at work.”

But

* Lib. VI. cap. 13. Auctor. rei rustic. p. 582.

But since the lungs during the time of expiration and inspiration always remain contiguous to the pleura investing the cavity of the thorax ^y, and since the expansion of the lungs by the inspired air is always attended with a like dilatation of the breast, it seems very probable that the adhesion of the lungs to the pleura does not always occasion any great uneasiness. Hence Helmont ^z laughs at the physicians, when, upon opening the body of a person suffocated by an asthma, they imputed the cause of the patient's sudden death to an adhesion of the right lobe of the lungs backward to the pleura. But he testifies that he dissected some soldiers who were suddenly killed, in order to inquire into the truth of this matter, and he then saw *pulmonem retro costis adnatum, benevalentibus, quosque nulla antea presserat difficultas spirandi: caeteros inter velocissimus quidam Hybernus a pedibus Marchionis de Winchestrae, pugione enectus, dissectusque, utrumque pulmonis lobum costis adnatum ostendit*; “ that the lungs adhered backward to the ribs in those who were well in health, without being before troubled with any difficulty of breathing: and among the rest upon dissecting the body of an Irish running footman belonging to the Marquis of Winchester, killed by a stab, he demonstrated the lobes of the lungs adhering to the ribs on both sides.” It cannot be denied that an adhesion of the lungs to the pleura is observed in many bodies, who during life perceive no molestation from thence; but in the mean time that the greatest part of the lungs adhere to the pleura, more especially to that part which covers the mediastinum

^y Vide H. Boerh. Instit. Medic. §. 606, 607.

^z In Capitulo *Asthma & Tussis* §. 46, 47. p. 293.

mediastinum and pericardium, it seems impossible, but that there must follow from thence an impediment to the alternate dilatation and contraction of the lungs which is necessary to a free respiration. Thus Peyerus^a found in the body of a youth, who from his infancy was troubled with a difficulty of breathing, especially after the exercise of running, that the lungs on the right side firmly adhered to the pleura, diaphragm, and pericardium; but, on the left side, the lungs were free from the pleura, though they were attached to the pericardium and diaphragm. Many instances of the like kind are related in Bonetus^b, which confirm what has been said before. Yet it must not be denied that Diemerbroeck^c found in the body of a thief, who was hanged, that the lungs not only adhered on each side to the pleura, but likewise grew so firmly to the mediastinum and diaphragm, that they could not be separated from thence without laceration; and yet notwithstanding this the man lived in health without any difficulty of respiration.

S E C T. DCCCXLIV.

FINALLY if the bronchial or pulmonary artery is invaded with a most violent inflammation (§. 388.) either from an internal or external cause (§. 824.) a gangrene is in a little time produced, and from thence speedily follows a sphacelus from the great quantity and motion of blood together with

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^a Parergo 3. cap. 6. p. 145, &c.^b Sepulcret. Tom. I. Lib. II. Sectio I. p. 508, 509, 510, &c.^c Diemerbroeck. Anatom. Lib. II. cap. 13. p. 308.

an incessant action of this very tender viscus. But that this consequence is about to follow we know, 1. From the signs of a most violent peripneumony not yielding to any methods or remedies. 2. From extreme weakness suddenly arising and more especially shewing itself in the pulse. 3. From a coldness of the extremities. But that a gangrene or sphacelus is already formed we know, if after these signs preceding the spitting becomes ichorous, thin, ash-coloured, livid, black, and foetid. But from hence speedy death follows.

We come now to that way of terminating an inflammation, wherein the part affected becomes gangrenous. That the most violent inflammations threaten a gangrene was declared in the comment to §. 388. together with the signs by which that future disaster might be known. When therefore a most violent inflammation of the lungs ensues from the causes before enumerated at §. 824, a gangrene will soon be formed, since from the abolition of the vital influx of the blood through the arteries, and it's efflux through the veins, any soft part of the body tends to death; but, when a gangrene is once formed, it soon changes into a sphacelus, or a perfect mortification of the affected part, concerning which, see §. 419. But the reason of these particulars will appear from the following considerations.

The bronchial and pulmonary arteries, being dispersed throughout every part of the lungs, are at length spent in the most minute and tender capillaries, which, being most of them obstructed

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in a violent inflammation of the lungs, are obliged to sustain all the impetus with which the right ventricle of the heart urges the blood into the trunk of the pulmonary artery, and with which the left ventricle urges the blood into the bronchial artery. There is therefore the greatest danger lest these very tender vessels should break suddenly, whence a gangrene may follow (see §. 388.) This danger is further increased, because the inflamed lungs cannot rest, but are obliged to dilate and contract alternately so long as life remains; but the lungs are rather obliged to labour with more powerful efforts and agitations, as the disease is worse. Moreover it is demonstrated that the inspired air serves to cool the blood^a, which acquires a most intense heat by its rapid motion through the pulmonary artery; which refrigeration is so necessary that an animal being deprived of it for a few minutes dies, and, presently falling into the most horrid putrefaction, exhales an intolerable vapour or smell. But violent inflammation is attended with a great heat; and the inflamed vessels being distended lessen the space for the inspired air, whence we may expect the blood will be much less cooled. It is therefore evident that in a violent inflammation of the lungs all those causes concur, which are able to produce a sudden mortification, and speedy putrefaction of the part. But we know that a peripneumony is about to terminate in this manner from the following signs.

1. All these signs were enumerated at §. 826. If now at the same time the disease is not relieved by some critical evacuation or a deposition, nor any endeavours from art, we then

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know

^a Vide H. Boerh. Chem. Tom. I. p. 275.

know for certain that a gangrene of the lungs is at hand.

2. For the strongest man being invaded by a most sharp peripneumony immediately becomes so weak that he cannot lift up his hand. When we treated of weakness as a symptom in fevers at §. 660, it was demonstrated to follow from an impeded influx and pressure of the nervous fluid into the muscles. But for this influx and pressure to subsist requires a free action of all the vessels which constitute the fabric of the brain. But in a violent peripneumony almost all the blood is collected betwixt the right ventricle and the extremities of the pulmonary artery, while at the same time the free return of the venal blood is impeded from the brain (see §. 826.) whence the encephalon is compressed: in the mean time the left ventricle of the heart, receiving scarce any blood, will not be able to send a due quantity by the carotid and vertebral arteries to the encephalon; and therefore the most powerful causes of weakness will concur together. From what has been said likewise may be understood the reason why this weakness shews itself more especially in the pulse.

3. For the left ventricle of the heart does not receive blood enough to be sent to the extreme parts of the body, and to propagate heat there; and for this reason a coldness of the extremities in a peripneumony is justly esteemed as a most fatal sign.

But, when a gangrene is already fixed in the lungs, the like degenerations ensue with those mentioned at §. 388. & 427. For it was there observed that an inflamed part turns to a gangrene, the juices putrefy, an extravasated ichor is

Sect. 844, 845. Of a true Peripneumony. 341

is collected in blisters under the cuticle, and a grey, pale-brown, or at length a black colour takes place, and the part thus affected dissolves into a putrid matter. The spittle then discharged has exactly the like putrid qualities, and all the mortified parts very speedily tend to putrefaction, from the great heat here assisted with a free accession of the air. But at the same time it is likewise evident there can be few or no hopes when this vital organ is invaded with a gangrene, and consequently a speedy death must be expected. See what has been said upon this subject in the comment to §. 432. where we treated of a gangrene in the viscera.

S E C T. DCCCXLV.

ALL these ways of terminating a peripneumony (§. 830, 832, 836, 837, 843, 844.) are demonstrated to us from observations, from histories of the disease, and from opening bodies deceased of it.

The whole history of the disease preceding informs us that a peripneumony is a true inflammation of the lungs; and therefore the usual ways of terminating every inflammation ought here to be expected. Moreover it appears from the most faithful observations, that, by a translocation of the morbid matter upon other parts of the body, new diseases arise from a peripneumony, and that the event is various, according as the metastasis is made upon this or that part. But all this is confirmed by the dissection of bodies deceased of this disease; as appears from

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many

many instances before alledged, and as may be seen more at large in Bonetus and others.

S E C T. DCCCXLVI.

FROM what has been said it is evident that the disease which the antients have described under the title of a peripneumony is a true inflammation of the lungs.

When we treated of the definition of a peripneumony at §. 820, it was observed that in the said definition we were to suppose what could only be made to appear from all the symptoms or phaenomena to be gathered together throughout the whole course of the disease. For this reason (after having delivered the history of a peripneumony, and considered the various changes by which it leads either to health, death, or other diseases) the present section is placed here as a corollary or deduction, confirming the truth of what was only assumed or supposed in the definition of this disease. But the reason of this conclusion appears evidently from what went before; and in the comment to §. 820. it was proved that by the term peripneumony the antient physicians understood a true inflammation of the lungs.

S E C T. DCCCXLVII.

AND from what has been said likewise the truth of that prognosis will appear plain, wherein it is asserted that a peripneumony is always very dangerous from the function of the lungs being immediately necessary to life, and from the impossibility of removing the inflammatory matter, arising from the great quantity and impetus of the blood continually brought to the obstructed vessels, from the perpetual motion of the viscus, from it's situation being such as will not admit the application of remedies, from the extreme tenuity of the small vessels rendering them easy to be destroyed, and finally from the impossibility of making a revulsion, which is so necessary in the cure of an inflammation.

It was before concluded in the comment to §. 829. that a peripneumony is always dangerous; and the same now appears confirmed from all that has been said throughout the whole history of the disease. For the part affected is one of the vital organs, a slight distemper in which is never without danger, from the viscus being so extremely necessary to life, as we have been convinced by so many fatal instances, where patients have neglected a slight peripneumony under a notion of being only a sort of cold or catarrh; and therefore observing no regimen in their diet, nor to make use of proper remedies, they have frequently had the disease end in a fatal

vomica and consumption of the lungs. But the action of the lungs themselves is moreover of the last necessity to attenuate or subdue the inflammatory matter; for whatever diluent, attenuating, or resolving, is taken into the stomach with a view of curing the inflammation, must afterwards be received by the veins and pass through the lungs in order to exert their efficacy. When therefore the lungs are stuffed up with inflammatory matter, all such remedies will stagnate before the obstructed parts, or will pass through the vessels which are yet pervious into the left ventricle of the heart. And again, when the inflammatory matter lodged in other parts of the body is so dissolved as to pass also into the veins, it is conveyed with the venal blood to the right ventricle, and is afterwards so ground and dissolved by the action of the lungs, that it can for the future pass freely through the ultimate extremities of the blood-vessels^e; all which cannot be performed so long as the action of the lungs is injured. If now it be considered, that all the venal blood of the whole body is every moment drove with a great force by the adjacent heart into the obstructed vessels, it will be evident that the inflammatory matter must be more and more protruded into their narrower, converging parts, where what is most fluid will be expressed, and what is thick will be accumulated and compacted together. And from thence the disease must of necessity become suddenly worse. Add to this that the lungs can never rest from action, so long as a patient lives, but on the contrary they must be agitated so much the more frequently and violently by the stronger efforts of respiration, as the passage of the blood through the lungs

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^e Vide H. Boerh. Institut. 200. §. 2. & §. 208.

more difficult. Moreover, if we except a vaporous bath, there is here no opportunity of applying any topical remedies to be of service, because of the situation of this viscus; whereas in a pleurisy, for example, we apply baths, fomentations, emplasters, cataplasms, &c. with the greatest advantage. If again we consider the exceeding tenuity of the vessels which make up the fabric of the lungs, it will appear plainly that they may be easily destroyed, when the force of the heart urges the blood into the obstructed vessels; and that from thence a fatal gangrene ought to be feared, if the peripneumony is violent, as observed a little before. But moreover a revulsion which is so necessary in the cure of an inflammation (see §. 396. No. 4.) is here impracticable. For all the blood of the whole body must pass once through the lungs in the same time that it is moved through all the other parts of the body: consequently the motion of the blood through the lungs cannot be much impeded or lessened by any art, and life be still remaining. For in the heart and lungs is seated the fountain-head to which all the humours of the body flow, and from whence every individual part of the whole body is supplied. Moreover in the cure of an inflammation that method is of the greatest use whereby the obstructing matter is repelled from the narrower into the larger parts of the vessels (see §. 395. No. 4.); but it was shewn in the comment to §. 141. No. 1. that this retropulsion takes place more especially when the impetus of the vital humours urging against the obstructions is so much lessened by a large and sudden blood-letting, that the contractile power of the vessels may prevail over the obstructing

structing particles and drive them towards the larger diameter or capacity. But, when inflammatory matter is lodged in the narrow extremities of the pulmonary artery, though blood were to be let until fainting ensued, the valves placed in the right arterial orifice of the heart would notwithstanding prevent that retrograde motion of the blood in the pulmonary artery; and therefore this repulsion can only succeed in a slight peripneumony, which invades only the extremities of the bronchial artery. But it was observed at §. 825. that, when the ends of the bronchial artery are inflamed, the disorder is very easily spread to contiguous branches of the pulmonary artery itself: and therefore it is evident but little good can be expected in a peripneumony either by revulsion or retropulsion of the inflammatory matter; and therefore it is justly concluded that a peripneumony has always a dangerous prognosis.

S E C T. DCCCXLVIII.

FR O M hence (§. 847.) it is evident at what time, for what reasons, and with what symptoms a peripneumony must needs terminate in death: namely, when the whole lungs together with the heart are inflamed, if the heart fall to one side, and the patient lies cold with a paraplegia or palsy of half the body, destitute of sense; in that case death follows on the third or fourth day. If the urine appears laudable and concocted in the beginning of the disease, but turns thin after the fourth day. If the patient is obliged to sit

fit upright in the height of the disease. If there is a discharge of purulent matter downwards by stools ; if the lungs are dry with heat, and a rattling in the throat, as if they were full ; if the peripneumony is violent in a very dry habit, the patient's body being hard, callous, and exercised with labour ; if the disorder is of a bad kind and attended with a slight dripping of very red blood from the nose ; if the peripneumony is a dry one with red spots, dispersed about the breast ; if a coryza with violent sneezing precedes or follows the distemper, if the disorder took its origin from an ardent fever ; if a bilious spitting with purulent matter begins to appear after the sixth day ; if the spitting is from the beginning very bloody, of a simple yellow, or thick and white, or very frothy, not relieving the pain ; or if it appears brown, filthy, like lees of oil, black, bluish, greenish, and uneven, or grumous ; if such spitting neither relieves the fever nor difficulty of breathing, the patient then expires on the seventh or ninth day. But, when death is coming upon them, the pulse fails, all the parts grow cold, and the breast only, with the head and neck, are very hot, while the cheeks look red and livid.

We have already seen, that the general prognosis in this disease denotes danger ; but this in various degrees, as it not always but very frequently terminates in death. It will be therefore worth

worth our while to consider those fatal symptoms which point out to the physician, that certain destruction is at hand. It would indeed be much better to cure the patient, than to foreknow what is about to happen ; but, as the first is not always in the power of the physician, he is therefore obliged to consult his reputation, and clear himself from all blame, as he may, if he foresees and foretells what patients can recover and which of them must perish, as Hippocrates ^f very well observes to us, before he proceeds to give us those excellent rules which regard the prognosis of diseases.

If the whole lungs, &c.] This prognostic is taken from Hippocrates, as we mentioned before upon another occasion in the comment to §. 432. and in his Coan Prognostics ^g it runs thus : *Quibus vero totus pulmo inflammatus fuerit cum corde, sic ut ad latus procidat, resolvitur totus aeger & jacet frigidus sine sensu, & moritur secundo aut tertio die. Si vero sine corde contigerit, & minus, longiori tempore vivunt, quidam autem etiam servantur* : “ But, “ in those who have the whole lungs inflamed together with the heart in such a manner that it “ lies on one side, the patient, being intirely paralytic and cold without sense, dies on the second or third day. But if the lungs are inflamed without the heart, or in a less degree, the “ patient survives a longer time, and sometimes “ also recovers.” For, when the whole lungs are inflamed, the right auricle and ventricle of the heart will be filled, from the course of the blood through the lungs being obstructed, whence the contrary veins will not be able to empty themselves, which will cause an inflammation in the proper substance of the heart itself, as was proved before

^f In Prognosticis initio. Charter. Tom. VIII. p. 584, 585.

^g No. 401. Charter. Tom. VIII. pag. 875.

before at §. 375. where we treated of the various causes of inflammation. But, since the heart is suspended in the pericardium almost in an horizontal posture by it's four large blood-vessels, in such a manner that the auricle and ventricle of the heart look towards the fore part of the body^a, the reason is evident why, the right auricle and ventricle being very much distended while the left are almost empty, the heart is from thence thrown forward so as to touch the side of the thorax. Indeed it seems wonderful, that Hippocrates should be able to remark this, unless he learnt it from the known laws of the circulation, or else from the dissection of bodies deceased of a peripneumony. Perhaps a gangrenous livid colour fixed in the side where the heart is placed might have afforded this sign, for he remarks, in the place which immediately goes before that which we last cited in his Prognostics¹, that the lungs being violently inflamed, *sic ut ad latus affideant*, “so that they “fall close to the ribs,” appear with a livid colour externally; and the patients thus affected were by the antients called (βλητᾶς) withered or blasted.

But since a due influx of the nervous spirits and arterial blood into the muscles is required in order to the performance of their motion; and from what was said at § 826. it is evident that almost all the blood is collected about the heart, only the thinnest part of it being able to pass through the lungs into the left ventricle, when a person lies ill of a violent peripneumony; and, as at the same time the return of the venal blood is obstructed from the encephalon, this last must consequently be compressed by the distension of the larger vessels

^a Eustach. Tab. XV. fig. 2. & Tab. XVI. fig. 1.

¹ No. 400. Charter. Tom. VIII. pag. 875.

fels with accumulated blood; whence it is evident why such patients lie paralytic, so that I have seen a very robust youth, even in the beginning of the second day of a very bad peripneumony, lie unable to move a hand. From what has been said, it may likewise be understood why almost all parts of the body, more especially the extremities, grow cold, and why such patients lie dull and senseless, namely, when they are very near death; for before that time they suffer the most intolerable anguish. On this account Aretaeus^k takes occasion to say, that the patient is not sensible of the present danger when death is near at hand; and, being asked concerning their disease, they answer, that they feel nothing amiss: but then the cold extremities, the livid nails, and weak pulse, which beats very quick and intermits, sufficiently denote that a fatal event of the disease is at hand. But, since these worst signs never attend but when the peripneumony is very violent, the patient can seldom support the violence of the disease beyond the third day, but is generally taken off sooner.

If the urine, &c.] When we treated of the cure of a peripneumony at § 830. No. 4. which is brought about by a discharge of the morbid matter in the urine, we then examined into this prognosis, and likewise remarked that it is to be found in two places of the Coan Prognostics, but with this difference that, in one place where it is to be met with, it is to be esteemed a fatal sign, *si ante quartum diem tenuis fieret urina*, “if the urine becomes thin before the fourth day;” but in the other place it is, *si post quartum diem*, “if it becomes so after the fourth day.” But at the same time it was likewise remarked, that the text is
more

^k De causis & signis Morbor acutor. Lib. I. cap. 1. pag. 11.

more probable in which we read it, *ante quartum diem*, “before the fourth day.” For then it denotes a sudden discharge of the morbid matter begun, and is of ill presage if it becomes suppressed before the lungs are intirely relieved: for, since such a peripneumony cannot be expected to terminate in health, unless the disorder is slight (see §. 830.), therefore by a urine laudable and concocted from the beginning of the disease, and continued so for three or four of the first days, it would seem probable that the morbid matter might be evacuated; and therefore in such a case the urine may be discharged thin after the fourth day without danger. But then only we have reason to fear when the urine, being first thick, becomes thin before signs teach us that the lungs are perfectly relieved.

If in the height of a disease, &c.] See what has been said concerning an erect respiration in the comment to §. 826.

If there is a discharge of matter downwards by stool.] We have seen before at §. 830. that the material cause of a peripneumony, being collected and rendered moveable, acquires a nature like to that of pus or matter, and yet that it does not absolutely deserve the name of matter; and we observed, that it is expelled under that appearance by various outlets from the body, and among the rest by stool. But we do not here treat of such a discharge, but of a copious deposition of true purulent matter by stool, which in the present disease, supposes a large suppuration of the lungs to have preceded. For thus we read in the Coan Prognostics¹: *Pulmonem suppuratis pus per alvum secedere lethale*: “That a discharge of matter by stool “is a fatal sign in those who have a suppuration “of the lungs.” For, since the matter which is
this

¹ No. 429. Charter. Tom. VIII. pag. 877.

this way discharged mixes with a great many other substances which are naturally expelled from the body by stool, it follows, that there must be a great quantity of it in order to distinguish it. But the matter contained in a vomica of the lungs, to pass off by stool, must eat through some of the adjacent viscera, as, for example, the stomach, liver, &c. of which we gave some instances in the comment to §. 836. No. 4. or else the same matter being attenuated by heat and stagnation in a close part may be absorbed by the veins, and, after mixing with the circulating humours, it may be discharged from the body by the intestines, passing into them by the meseraic vessels. It is evident enough what little room there is left to hope when an ulceration, first seated in the lungs, has corroded the other adjacent viscera; but perhaps there may be more room for expectation, when the matter being absorbed without any corrosion of the viscera is expelled by stool. But if it be considered, that the best matter has the mild nature and consistence of cream, it will appear evidently difficult for it to be absorbed, so long as it retains those good qualities. Indeed by stagnation it becomes attenuated, and then it likewise becomes putrid and acrid, as we demonstrated at §. 406; and therefore matter, thus altered and then absorbed, will affect the whole mass of blood with a putrid cacochymy, which has almost constantly a fatal event; because then the healthy humours, being dissolved into a putrid mass, are likewise evacuated therewith by stool with a sudden loss of strength, as is evident in consumptive people, in whom such a putrid diarrhoea commonly terminates life and the disease together. It is indeed true, that there are some uncommon cases where the matter absorbed from an abscess has been evacuated by stool

stool with a salutary event, and some even in vomica's of the lungs (see the comment §. 406.); but, since the rules of prognosticating are derived not from unusual but from the more frequent events of diseases, I believe we may conclude a discharge of matter downwards by stool in this disease to be commonly at least fatal, if it is not always and absolutely so.

If it is dry with heat, &c.] This is that very bad sign in a peripneumony, wherein the by-standers perceive a disagreeable rattling in the wind-pipe, like that of boiling water in a pot covered with it's lid, whence some physicians have called it the heat of the boiling lungs. But this rattling almost constantly denotes a narrowness of the air-vessels of the lungs, whether rendered less capacious by thick phlegm not easy to be brought up, or from the over-filled and distended blood-vessels compressing the air-vesicles of the lungs: and sometimes a noise of the like kind may proceed from a dryness of the lungs, as we observed upon another occasion in the comment to §. 826. Such a rattling is perceived in the asthma of old people, when the lungs are stuffed with a thick mucus; the noise from whence is not improperly compared to the piping of the chicken in the egg before they are hatched, by the impatient heir expecting the good old man's death, in Lucian:^m but such a rattling of the lungs from this cause is not of very bad import, as it ceaseth or is greatly lessened by spitting out the phlegm a few times. In a true peripneumony it denotes the blood-vessels of the lungs to be so much filled and distended that they compress the air-vesicles, whereby the free entrance and return of the air is impeded; and at the same time the mucus thickening, in the

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manner

^m Dialog. Mortuor. Tom. I. pag. 229.

manner we shall presently explain, is shook by the air; though, from the extreme difficulty of the respiration, it cannot be brought up from the sides of the passages to which it adheres and excites that disagreeable noise. Sometimes a slight noise of the like kind is perceived, when the morbid matter is discharged by spitting (§. 830. N°. 4.); but this immediately goes off when the matter, which occasioned it in the trachea, is expelled. Hence this prognostic is delivered to us by Hippocratesⁿ with caution, when he says: *Malum quoque, si nihil expurgetur, neque projiciat pulmo, sed plenus existens in gutture ferveat*: “It is also a bad sign if
 “the lungs can bring up and evacuate nothing,
 “but, being full, the matter boils up in the throat.” In other places, mentioned in the comment to §. 826, he says, there is a rattling in the breast like to that of parchment.

If the peripneumony is violent, in a very dry habit.] For then there is both a great inflammatory tenacity in the humours, and the rigid vessels cannot give way, whence nothing good can be expected in a disease of it's own nature so dangerous; see what has been said in the comment to § 830. N°. 1.

If the distemper is of a bad kind, and attended with a slight dripping of very red blood from the nose.] This prognostic is given us by Hippocrates in his Coan presages.^o It was observed before in the comment to §. 830. N°. 4. that the peripneumony seldom goes off by a bleeding from the nose: but from what was said upon this subject in the comment to §. 741. it appears, that only an hæmorrhage from the nose which is copious can be of use in acute diseases; but that a slight dripping

ⁿ In Prognosticis Charter. Tom. VIII. pag. 643.

^o N°. 412. ibidem. pag. 876.

ping is almost constantly of bad import, unless by happening on an indicating day it foretells a large critical evacuation on the day next following. Hence the reason appears why it is to be esteemed a fatal sign in this disease, especially if the blood appears of a very deep red. For it then denotes that the vessels of the head are so much distended, from the obstructed course of the blood through the inflamed lungs, that they now begin to break, yet that the blood is too much thickened to have a free discharge, as it appears very red and immediately congeals.

If it is a dry peripneumony, with spots, &c.] This is also to be found in the Coan Prognostics. For after Hippocrates^p has observed: *Qui in peripneumoniis siccis pauca cocta educunt, metuendi sunt*: “That those are in danger who in dry peripneumonies discharge very little concocted matter;” he subjoins also: *Rubores in pectoribus utcumque lati talibus perniciosi sunt*: “That red spots in the breasts, however large, are of pernicious consequence to such patients.” For this sign denotes the cutaneous vessels to be stuffed up, or else that, being burst, they have extravasated their blood; and soon after these spots are accustomed to turn livid in peripneumonies, and by that means afford signs of a gangrene beginning. In most diseases it is observable, that the internal parts being affected shew themselves by an alteration in the skin. When a violent inflammation of the bowels tends to a gangrene, such red spots sometimes appear in the skin of the abdomen, and soon grow livid. In the worst kind of whitloe, where the disorder is seated about the tendons of the flexor muscles of the fingers, there is often a broad red belt or ring, extending

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itself

^p Coac. Praenot. N°. 417.

itself in the skin according to the course of the muscle whose tendon is affected ; and then there is commonly a deep inflammation seated through that whole length, which most frequently terminates in a gangrene or a very bad suppuration. When nature attempted a large and salutary hæmorrhage from the nose in a certain patient, Galen observed that the obscure redness which extended from the right side of the nose to the cheek became much more conspicuous, (see the comment to §. 741.) From hence it appears, that in the prognosis of diseases we ought to attend to all those signs, even though the immediate connection of those signs with what they denote does not easily appear to an observing physician. A faithful observation of the like signs will always be of use ; but the reason also may perhaps be known hereafter.

If a coryza or sneezing, &c.] What we are to understand by the term coryza was explained before in the comment to §. 69. N°. 5. and we said something upon the same subject in the commentaries to §. 787. and 793. where we treated of quinries arising from this cause. There it appeared, that an incipient coryza is often accompanied with a violent sneezing. But, if we consider what happens in a coryza, the reason will be evident why that is pernicious when it goes before or follows after a peripneumony. For in this disease the membrane lining the nostrils, fauces, windpipe and lungs themselves, is usually in a small degree inflamed and so much swelled, that the patient cannot draw the air through his nose. When therefore such a cold is joined with an inflammatory peripneumony, the difficulty of breathing will be increased, as two causes concur to lessen the

the passage of the air into the lungs : for the air-vesicles of the lungs are compressed by the inflamed and swelled arteries which are spread upon those vesicles on all sides ; and at the same time their capacity will be lessened from the coryza swelling the membrane which lines the internal surface of those vesicles. It is therefore very justly observed by Hippocrates, ^a *In omnibus autem morbis circa pulmonem gravedines & sternutationes & praecessisse, & consequi, malum* : “ That defluxions, “ or colds, and sneezings, preceding or following, in all diseases of the lungs, afford a bad “ sign.” If we now also consider, that by the coughing and sneezing which usually attend colds the inflamed lungs are violently agitated, and the impulse of the humours into the obstructed vessels is increased, there is evidently just reason to fear a rupture of these very tender vessels, and a turning of the inflammation into a fatal gangrene.

If it arose from an ardent fever.] For in an ardent fever the blood is deprived of it's more mild or fluid parts (see §. 742.), and there is an inflammation almost throughout the body : if therefore in this disease the blood begins to hesitate in the narrow ends of the pulmonary artery, there seems to be no room left for hopes : for either speedy suffocation and death must ensue, or else the peripneumony which arises in an ardent fever must, from the acrimony, thickness, and violent motion of the humours, terminate in a gangrene. But that an ardent fever often ends in a fatal peripneumony was observed at §. 741.

We come next to those prefaces which are taken from spittings ill-conditioned in this disease.

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If

^a In Prognosticis Charter. Tom. VIII. pag. 643. Et Coac. Praenot. N^o. 399. ibid. pag. 875.

If a bilious spitting, &c.] This is an observation no less true than wonderful, made by Hippocrates. He had so great a value for a bilious spitting mixed with a small quantity of blood, that from thence he expected the intire cure of a peripneumony (see §. 830. N°. 2.) But on the contrary he condemns a bilious spitting which is purulent, if it appears after the sixth day. For such a spitting seems to denote that the inflammation of the lungs, which attended in the beginning of the disease, is now changed into a suppuration, while at the same time there is a new inflammation exciting that bilious or yellow spitting which is not yet concocted or matured; whence the patient is at that time afflicted with a double disorder. See what has been said upon this subject in the comment to §. 833. N°. 3. where you will also meet with those passages of Hippocrates which contain this prognosis.

From the beginning very bloody.] A very little blood, mixed with a good and concocted spitting, is esteemed one of the best signs in this disease, as we observed at §. 830. N°. 2. for then the obstructing matter escapes (*per anastomof.n*) by a dilatation of the mouths of the arteries which open into the trachea, whereby the lungs are happily set at liberty. But, when the spitting is very bloody, there is reason to fear that the impetus of the vital humours from the adjacent heart is so very great as to break open the very small and tender vessels of the lungs, and extravasate their blood. Hence the reason is evident why Hippocrates^r, in treating of a pleuritic and peripneumatic spitting, does not absolutely condemn the appearance of blood therein, but only objects against that which appears

^r In Coac. Praenot. N°. 390. Charter. Tom. VIII. pag. 874.

appears very bloody, in the beginning of the disease, before a salutary concoction and expulsion of the morbid matter can be expected. Thus also Aretaeus enumerating^s the worst symptoms of a fatal peripneumony has the following passage: *Tussis adest plerumque sicca. Si vero quid sursum educitur, spumans pituita est, vel exquisitè biliosum, vel cruentum admodum floridum. Illud vero cruentum aliis pejus est.* “ There is commonly a dry cough which attends; but, if any thing is brought up, it is frothy phlegm, or extremely bilious, or else very bloody and florid: but the bloody spitting is worse than the rest.”

Of a simple yellow.] This is also condemned both by Hippocrates and Aretaeus in the passages lately cited from them. But this simple yellow spitting ought to be well distinguished from that which has small streaks of blood, and which appears opacous, thick, and concocted, of a nature like that of pus or matter. But that simple yellow spitting is nothing more than the mucus collected in the vesicles of the lungs, of a thinner consistence, tinged yellow, and almost pellucid. But such a spitting seems to follow when the violence of the inflammation in the arteries stops the red blood, and transmits only its yellow serum, which returns partly by the veins to the left side of the heart, and, being in part pressed through the arterial orifices into the bronchia and wind-pipe, dilutes the natural mucus of the lungs, and tinges it with its own colour. Such a spitting therefore denotes that the grosser parts of the humours are accumulated in the lungs, while the

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thinner

* De Causis & Signis Morbor. Acutor. Lib. II. cap. 8. p. 11.

thinner parts only can pass through them; from whence appears the reason why it is a fatal sign.

Thick and white.] This is nothing more than the mucus of the lungs collected in the bronchia, where it is thickened by warmth and stagnation so as to retain the round figure which it acquired in the cavity of the lungs even after it is spit out. Whence it appears that by such a spitting there is none of the morbid matter discharged which oppresses the lungs; and therefore it is on this account reckoned by Hippocrates^t among the bad kinds of spittings. Otherwise this spitting does not of itself denote any malignity as does the bloody, brown, filthy, &c. spitting. Hence Hippocrates prudently distinguishes this in another place^u, where he says, *Flavum enim (sputum) si sincerum fuerit, periculosum; album autem, & viscidum & rotundum, inutile.* “ For a yellow spitting, if simple, is dangerous; “ but a white, viscid, and round-figured spitting “ is useless.

Very frothy:] When a mucous spitting becomes so much thickened as to retain a long time the air with which it is agitated in the cavity of the lungs, it is said to be frothy. But for the most part a mucous spitting is commonly frothy, and therefore does not absolutely afford a fatal sign. Thus we read in Hippocrates^x that peripneumonic patients have in the beginning a thin and frothy spitting; but at the same time he remarks that in process of time the spitting improves and at length either cures or at least greatly relieves the distemper. The like observation he also gives us in another place^y. Such a spitting

^t Vide locum modo citatum.

^u In Prognost. Charter. Tom. VII. p. 642.

^x De Morbis Lib. III. cap. 14. Charter. Tom. VII. p. 580.

^y De internis Affectionibus cap. II. Ibidem. p. 640.

ting therefore only is condemned, which is frothy in a great degree; for it denotes the humours to be urged with a great force through the scarcely pervious vessels of the lungs, whence more thick and tenacious juices are expressed through the vessels which separate the natural mucus, as appears plainly in dying people. For, in the last agonies of these, there is a viscid whitish humour expressed into the wind-pipe, through which ascending by degrees it comes out by the nose and mouth, which appear frothy and disagreeable to the sight. What has been here advanced is very well confirmed by an experiment made by the celebrated Dr. Hales². He diluted the blood taken from a calf, while it was killing by the butcher, with a quantity of warm water, in which was dissolved some nitre; he afterwards injected this mixture by a tube two feet high affixed to the pulmonary artery of the same calf, in order to see whether, by the pressure of such a column of the fluid as is equal to two feet high in the tube, it might be able to pass through the arteries into the veins of the lungs. But he could not perceive that any part of it was transmitted into the veins, although the lungs were very much dilated and looked red. But at the time when the fluid pressed against the extremities of the pulmonary arteries, which it was not able to pass through, there was a white froth ran out through the wind-pipe. Hence Bennet³ judiciously observes that a white and frothy spitting seems only to be the effect of a slight internal sweating of the lungs. From all which the reason is evident why a very frothy spitting is of so bad a presage in a peripneumony.

Not

² Haemastat. Experiment 11. p. 75.

³ Theatr. tabid. Exercit. Diar. 19 p. 52.

Not relieving the pain.] See what has been said upon this subject in the comment to §. 830. No. 2.

Or if it appears brown, filthy, like lees, &c.] If we consider what has been said at §. 388. concerning that way of terminating an inflammation wherein it inclines to a gangrene, it will be evident that such a spitting almost constantly denotes a gangrenous corruption already formed in the lungs, and is therefore one of the worst signs in this disease. Such kinds of spittings are condemned by Hippocrates ^b, more especially the black. When the flesh of animals putrefies in a warm moist and open air, we see that, losing it's bright red colour, it becomes brown, livid, and sometimes green in the edges or of the colour of verdegrease. Altogether the like changes must happen to the lungs when that vital organ is invaded with a fatal gangrene, and begins to be consumed, as it is exposed to warm and moist air, whence a corrupt matter of the like colours is discharged by spitting. But more especially the worst presage follows from such a spitting, when all the preceding signs teach us, that the peripneumony has been extremely violent. For, when this disease is not absolutely fatal, there is sometimes a very bad kind of spitting discharged. Thus for example Hippocrates ^c remarks: *sputum lividum a sanguine fiat, si paucus ad multam salivam misceatur, neque confestim spuatur, sed intus maneat sempiputrefactum.* “ That a livid spitting proceeds from the blood when a little of “ it is mixed with a great deal of the saliva, and “ is

^b In Prognost. Charter. Tom. VIII. p. 642, 643, &c. & Coac. Praenot. No. 390. Ibid. p. 874.

^c De Morbis Lib. I. cap. ultimo. Charter. Tom. VII. p. 549.

“ is not immediately spit out, but confined with-
 “ in, and rendered half putrid.” Hence it ap-
 pears that sometimes a spitting of a bad colour
 may arise from the juices poured into the trachea,
 where being collected and retained for some time,
 it assumes such an appearance, though the sub-
 stance of the lungs themselves is not yet dead or
 dissolved. See what has been said in the com-
 ment to §. 432. where we treated of a gangrene
 in the viscera.

If it neither relieves the fever, &c.] We have
 already seen under the present section, that perip-
 neumonic patients die much sooner, when the
 whole lungs together with the heart are inflamed.
 But, when the disease is violent and not so preci-
 pitate, the patient commonly supports it for a
 longer time. The business of the physician is
 then to examine daily every thing that offers, and
 to observe whether any signs appear denoting
 that the matter of the disease is dissolved, moved,
 and disposed, either for a salutary discharge or
 translation to a less important part. If nothing
 of this kind appears, and the fever does not di-
 minish, but the difficulty of respiration remains,
 and all the symptoms increase, we may foresee
 that the peripneumony is about to terminate in
 death, which then commonly happens upon some
 of the more remarkably critical days, namely up-
 on the seventh, or ninth, next following; but
 concerning this see what has been said upon cri-
 tical days in the commentaries to §. 741. Hip-
 pocrates^d observes that, if the fever does not leave
 the patient on the seventh day, there is danger of
 death on that or on the ninth day of a peripneu-
 mony. But, to enable the physician to know as
 much.

^d De Locis in Homine cap. 7. Charter. Tom. VII. p. 365.

much as possible the fatal day, Hippocrates^e observes, after enumerating both the good and bad signs, that they ought all of them to be compared together, and that by this means only a true presage can be had.

But when death is coming on, &c.] As long as any of the impervious blood can be transmitted through the obstructed arteries of the lungs, life continues, though weak, and the pulse as yet moves. But, when only a small quantity of blood can pass through the lungs to the left ventricle of the heart, that vital fluid with heat cannot be sent to the extreme parts of the body, whence the extremities first grow cold, and at length all the lower parts of the body. But, since the right ventricle of the heart and large venous receptacles adjacent are very much distended with blood, and the whole lungs are stuffed up, therefore the breast chiefly glows with heat, and for the same reason the head and neck continue warm longer than the other parts, and the cheeks look red, as we explained before in the comment to §. 826. At length the blood perfectly stagnating in the upper veins, towards death, the cheeks grow livid, and the face itself, though turgid and red, now begins to grow cold: Hence Hippocrates^f observes it as one of the worst signs in this disease, *si corpus a calore inaequaliter affectum est, venere & lateribus vehementer calentibus, frons, manus, pedesque refrixerint*: “ If the body is affected unequally by the warmth, the belly and
“ sides being violently hot, while the forehead,
“ hands, and feet, are cold.” But, when the blood can no longer pass through the lungs, the
right

^e In Prognostic. Charter. Tom. VIII. p. 648.

^f Ibidem.

right ventricle of the heart continues full, and, ceasing to move, death is present. It is indeed true, that in those who perish by other diseases death often comes on with the like appearances; but it will be hereafter made evident at §. 874. that the proximate cause of death, and the ultimate effect of almost all fatal diseases, is a peripneumony.

S E C T. DCCCXLIX.

TH E cure of this disorder is to be varied according to the different state and symptoms of the disease, insomuch that what is proper and useful at one time in the disease may be mischievous, if given at another time of the very same distemper.

Having premised what relates to the definition of a peripneumony, with it's causes, effects, and signs, as well diagnostic as prognostic; and, having also considered the various terminations of this disease either in health, another distemper, or in death, we come now to treat concerning the cure of it.

But, from what has been hitherto said, it is sufficiently apparent that no general method of cure can be laid down sufficient for all the circumstances of a peripneumony, since it terminates so many and various ways in health. For it is either cured by a mild resolution, or else by a discharge of the morbid matter, by which the disease is carried off, and that through various outlets of the body; or else again the obstructing matter, which first disordered the lungs, is by
a me-

a metastasis deposited upon other parts of the body. Hence it appears that nothing more can be done than to examine and consider all the particulars separately, which ought to be consulted for the cure of each particular kind of the disorder. For, unless this method be taken, every thing will be accidental and uncertain, since what is serviceable at one time of this disease may be very mischievous at another, as we shall make appear by what follows hereafter.

S C E T. DCCCL.

IF therefore in a peripneumony there are all the signs described (§. 830. No. 1.) rest of the body and mind must take place, the air should be moist and warm, vaporous baths of fresh water must be applied to the lungs, nostrils, mouth, feet, and legs; the aliments must be thin and the drinks light; the medicines watery, nitrous, mealy, and sweetened with honey.

We proceed in the same method or order for describing the cure as we followed in reckoning up the various ways of terminating a peripneumony; therefore we treat first of those methods which are necessary when the disorder is curable by a mild resolution, concerning which we treated at §. 830. No. 1. in which place we also enumerated the signs pointing out to us that the disease is so conditioned.

As that way of terminating a peripneumony is the safest and consequently the most desirable which removes it by resolution, it is evident that
those

those conditions ought to be retained which are then present in the solid and fluid parts of the body; and therefore that there is no great change required to be made by blood-letting, purging, &c. There is indeed an inflammatory disposition present in the blood, but so slight that it may be easily resolved: the vessels are indeed obstructed, but they so easily give way, that they soon after transmit the impacted matter with which they were obstructed, and suffer it to pass through their narrow extremities. The curative indication therefore demands those conditions to be kept up which are necessary to a mild resolution, and to supply those which are deficient, concerning which we treated at §. 386. relating to the resolving of an inflammation.

But rest of body and mind are required to render the motion of the humours through the vessels very sedate, a circumstance absolutely necessary towards the mild resolution of an inflammation (see §. 386); for we have already seen at §. 99. that passions of the mind and muscular motion increase the velocity of the circulation. But the lungs above all parts are soonest and most powerfully affected by an increased velocity of the blood; because the whole mass of that fluid must pass once through the lungs in the same time that it pervades all the other parts of the body, agreeable to the ordinary course of the circulation, as we have observed before. Hence there will be danger of too much compacting together the obstructing matter by a too much increased velocity of the circulation, by which the matter may be drove further into the narrow extremities of the converging vessels, whence the resolution will be rendered more difficult.

But,

But, since a free motion or pliability of the vessels is reckoned among those things which are necessary towards a mild resolution (§. 386.), it will be therefore highly convenient to let the inspired air be warm and moist, than which nothing relaxes more. Hence therefore handkerchiefs moistened with warm water should be held to the nose, and the whole air of the patient's chamber should be filled with the like vapours. At the same time likewise a vaporous bath may be applied to the lower parts of the body, that the water being absorbed by the bibulous veins may dilute the blood, and by relaxing these parts render them capable of retaining a greater quantity of humours in themselves; and thus the impetus and quantity of the fluids will be diverted as much as possible from the lungs.

But since the chyle prepared from the ingested aliments mixes with the blood in the subclavian vein, and must immediately after be drove through the narrow vessels of the lungs, care should be taken therefore not to oppress the lungs, either by it's quantity or viscosity. Therefore the whey of milk diluted, with a concoction of barley, oats, bread, and the like, will be serviceable; by which alone, being taken under the denomination either of food or drink, the patient's strength may be sufficiently maintained until the inflammation is resolved; for this way of terminating a peripneumony can be expected only in the first days of this disease.

But a diluent vehicle is necessary to resolve any thing concreted, see §. 386; as also to dissolve the inflammatory viscid; therefore watery drink, with mealy substances boiled therein taken in such a quantity that they cannot be prejudicial
by

by their too great viscosity, will be of the greatest use, more especially with the addition of nitre, honey, or the saponaceous juices of soft emollient vegetables, as the juice of elderberries, most of the officinal syrups, &c. A simple decoction of barley with nitre and oxymel will therefore suffice for this indication; agreeable to which a formula or prescription may be seen in the materia medica at the number corresponding to that of the present Aphorism.

S E C T. DCCCLI.

BUT if the disorder is conditioned as at §. 830. N°. 2. the same remedies are to be used (§. 850.) with emollient and depurating medicines joined with such as promote the excretions, and moderately recruit the powers, with vapours, &c. for then blood-letting, with purging, sweating, and all other remedies which disturb the forementioned discharge, must be avoided.

When we treated of the cure of a peripneumony by spitting, at §. 830. N°. 2, it was observed that small particles of blood were then mixed with the spittle, and that this proceeded not from a rupture or erosion of the vessels, but merely from a dilatation of the extreme ends of the arteries opening into the cavity of the bronchia; and that this way the obstructing matter became discharged with the most happy success. All the same things are therefore required, which were recommended under the preceding section; for by those the morbid matter is dissolved and

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rendered moveable, and by the same means the passages are opened by which it ought to be evacuated. Hence emollient decoctions and such as gently deterge will here satisfy all the intentions, A formula or prescription of such a decoction is given in the *materia medica* of our author at the number of the present section, and according to the same rule many others of the like nature may be prepared from ingredients which are emollient and gently aperient, sweetened with honey or syrup of the five opening roots, or of marshmallows made according to Fernelius, &c. By a like diet the powers will be easily supported, and milk only diluted with two or three times as much water will suffice for this purpose; for by such an excretion the disease is usually terminated in a short space of time, provided the salutary discharge of the morbid matter in the spitting be not disturbed by unseasonable remedies. For, when unskilful physicians perceive the spitting to be thus tinged with blood, mistaking it for an ill presage, and being unjustly alarmed as if a dangerous spitting of blood was at hand, they often attempt to suppress such a discharge of spitting by blood-letting, with medicines that astringe, incrassate, &c. Frequently also the importunity of the patient's friends or attendants will extort the like practice from physicians otherwise skilful enough, but are so complaisant as to assent to their importunities to avoid their ill-will by a refusal, and to preserve their own character. For, if any thing happens afterwards of ill import in this doubtful disease, the physician is blamed, as if the patient suffered by his negligence. But it is the part of a prudent man openly and firmly to oppose himself to what he knows to be wrong,

Sect. 851, 852. Of a true Peripneumony. 371

wrong, rather than to yield himself to be captivated by the clamours of the ignorant to the damage of his patient. For the same reason likewise, all those means which disturb the body by purging, sweating, or the like, ought equally to be avoided.

S E C T. DCCCLII.

IF the disease endeavours to run off by a gentle diarrhoea or flux (as at §. 830. N^o. 3.), then mild emollient clysters are to be injected, fomentations of the like kind are to be applied to the abdomen; also emollient decoctions, with such things as are laxative in the smallest degree, will be serviceable, not neglecting those at the same time which are before directed (§. 850, 851.)

This is another way by which the morbid matter in a peripneumony passes out from the body. But by what signs this salutary flux of the bowels may be distinguished from a symptomatic and offensive diarrhoea in this disease, was declared before at §. 830. N^o. 3. All the same remedies are here required which were recommended under the two preceding sections to dissolve and render the morbid matter moveable, and to open the vessels of the lungs that they may afford it a passage outwards. Besides these also, such things will be useful as lubricate the passages towards which nature endeavours to throw out the morbid matter, with such as relax the vessels through which that matter ought to pass. Hence emollient clysters of

B b 2

milk

milk sweetened with honey, or prepared of barley water with syrup of marshmallows, will be useful to wash out the gross faeces stagnating in the large intestines, and to lubricate those passages. Fomentations, prepared of emollient herbs by decoction, should be applied warm in flannel cloths to the abdomen, in order to sollicit the matter that way, which spontaneously inclines thither, being very cautious at the same time not to let these applications grow cold, for by that they may do mischief. Internally may be given decoctions prepared from the like ingredients with the addition of honey, which by a gentle stimulus loosens the bowels at the same time that it lubricates all the first passages. But the stimulus of the stronger purges would be rather mischievous here, since only a gentle loosening of the bowels and not a violent purging is here required, as we observed before from Hippocrates at §. 830. N^o. 3.

S E C T. DCCCLIII.

WHEN the matter of the distemper inclines to go off by urine, as at §. 830. N^o. 4, the same methods are to be taken (as at §. 850, 851, 852.) But to these may be added bathing of the feet, and fomenting of the kidneys internally by emollient clysters, and externally by liniments, while at the same time the patient should drink liberally of a decoction which is very moderately absterfivè and diuretic.

Here every thing is the same as before, only the part is different by which the morbid matter
is

is discharged. If the urine appears thick, and begins to flow plentifully with a scalding or stranguery, while at the same time the lungs are relieved, we then know that nature chuses this way to free the body; and therefore the like remedies are necessary with those before mentioned. But the topical remedies now are to be applied to the region of the kidneys in the form of fomentation, or liniment. But likewise emollient clysters are here extremely useful, as by filling the large intestines they afford one of the best fomentations to the subjacent kidneys, as we shall explain more at large, when we come to the history of a nephritis. At the same time likewise will be serviceable those decoctions which, being possessed of a gentle diuretic stimulus in a large quantity of water, serve to increase the flow of the urine through the kidneys: a prescription of such a decoction may be seen in our Author's materia medica, under the number of the present Aphorism.

In all these cases therefore nothing remains but to discover the way by which nature endeavours to make an expulsion of the morbid matter; for, when this plainly appears, there no longer remains any difficulty in the cure, as Hippocrates^s informs us in the following Aphorism, which we mentioned before upon another occasion in the comment to §. 605. N^o. 13. *Quae ducere oportet ducenda sunt, quo maxime pergat natura, per loca conferentia*: “That which is necessary to be expelled should be drove out by the passages to which nature is most inclined by suitable emunctories.”

^s Aphor. 21. Sect. 1. Charter. Tom. IX. pag. 38.

S E C T. DCCCLIV.

IF the inflammation appears by the signs before given (§. 825, 826.) to be recent and great, dry, and in a robust person, before healthy and addicted to exercise, recourse must then be immediately had, 1. To a sudden and copious blood-letting, to be repeated according to the degree of the disease, that the mass of the grosser juices may be diminished, and that room may be made for the reception of diluent medicines; 2. To a vaporous emollient bath, the vapours of which are to be continually drawn into the lungs, and to be often applied to the other parts of the body; 3. To such decoctions as are diluent, resolving, emollient, laxative, antiphlogistic, nitrous, and anodyne, given in a small quantity at a time, often repeated and drank very warm; 4. To the mildest antiphlogistic clysters; 5. To a most thin diet of antiphlogistic or cooling liquors.

Hitherto we have considered what is to be done, when the peripneumony inclines to a mild resolution, or when the morbid matter, being dissolved and rendered moveable, is not yet so conditioned as to flow through the vessels with the healthy humours without disturbing the equable circulation, but passes out from the body by spitting, stool, or urine. We come now to see what is necessary to be

be done when the same disease is neither spontaneously resolved, nor the morbid matter yet rendered moveable or disposed to be evacuated, which we know from the apparent signs. Here then is an inflammation, which may be therefore followed with all the events of an inflammation; but, since the disorder is seated in a vital organ or viscus, we ought to be the most desirous of that termination or cure of it which is made by dispersion or resolution: for here a suppuration is extremely dangerous, a gangrene almost constantly fatal, and a scirrhus leaves behind it the most obstinate maladies; and, besides all this, the extreme necessity of the lungs to life occasions the patient to be suffocated by the increasing malady before the inflammation can have time to come to a suppuration.

How efficacious blood-letting is in the cure of an inflammation was demonstrated before; and therefore it is justly recommended in the present case. But in the mean time it must be observed, that this remedy is not convenient in every peripneumony, nor at every time or stage of the distemper. It was observed in the comment to §. 848. towards the end, that almost all fatal diseases excite a peripneumony a little before death; but it is evident enough, that, the patient's strength being exhausted in such a case, and there being but little blood left to move through the vessels, the opening of a vein must of necessity in that case hasten the patient's death, as it lessens the means by which the little life is as yet continued. Hence Aëgineta^b very prudently advises to avoid blood-letting in those who fall into a peripneumony from other diseases; and this more especially if they have lain ill a long time, or if blood-letting

B b 4

has

^b Lib. III. cap. 30. pag. 40.

has been already used in the beginning of the disease. The same is likewise true if the distemper has continued until the extremities grow cold, and the pulse, being weak, quick, and intermitting, denotes the lungs to be so far stuffed up with impervious blood, that only the thinnest part of that fluid can be transmitted through the lungs to the left ventricle of the heart in a very small quantity. Hence the reason is evident why 'tis said in the text, "If the inflammation be found recent, great, dry, and in a robust person before healthy and addicted to exercise." But a peripneumony is said to be dry, when either no spitting at all appears, or only such as arises from the lubricating mucus of the bronchia in the lungs abraded by coughing, but containing nothing of the morbid matter dissolved and evacuated this way, as we observed in the spitting, concerning which we treated at §. 830. N^o. 2. for there it was proved, that blood-letting ought not at that time to be used.

But this dangerous disease requires a speedy and copious discharge by the lancet, since a sudden suffocation is here threatened, and consequently seasonable relief, and powerful in proportion to the severity of the disease, is required, as Aretaeusⁱ well observes. But that Author is not willing to let the patient bleed 'till he faints^k for fear of increasing by that means the danger of the suffocation, which fear is not without foundation. It is indeed true, that a copious blood-letting continued until the patient faints away is a most efficacious remedy for the cure of inflammations, as it takes off the whole impulse of the vital fluid urging behind the obstructed parts of the vessels, and as the vessels

ⁱ De Curat. Morbor. Acutor. Lib. II. cap. 1. pag. 94.

^k Ibidem.

vessels contracting themselves drive back the obstructing particles towards their larger capacities; (see §. 400.): but it was proved in the comment to §. 847, that the valves, seated in the right arterial orifice of the heart, prevent this retrograde motion of the blood in the pulmonary arteries, when fainting is either present or at hand; and that therefore little good could be expected from such a profuse bleeding. In the mean time when the patient faints, the motion of the heart ceases, whence all the humours stagnate in the lungs; and at the same time the extreme parts, being contracted by cold, propel the venal blood into the sinus of the vena cava, the right auricle and ventricle of the heart, where being collected it stagnates, and is disposed to concretion, or even frequently is already hardened into polypous fleeces; so that soon after, when the patient revives from the swoon, that blood, which is now almost concreted, will be drove through the lungs which are already in many parts obstructed. Hence therefore the danger is evident of increasing the disease by this means. For we see that people who faint away from any cause are soon after, when they recover themselves, troubled with anguish and sighings, and complain of an oppression at the breast, until the particles of the blood which began to cohere are again divided by the action of the vessels and lungs, by which means the free motion of the blood through the vessels is restored.

It is therefore most adviseable to bleed the patient lying down upon the bed, as thus there will be less danger of fainting; and then the bleeding may be sufficiently copious and from a large orifice, but not continued until great weakness ensues; for it should be rather repeated again afterwards,

terwards, if there is a necessity. Hence Aretaeus ¹, though he recommends blood-letting from both arms at the same time, gives it as an admonition immediately to stop the bleeding, if the breathing becoming easier denotes that the lungs are relieved; and afterwards he would have the bleeding repeated, if the increase of the symptoms calls for it.

Thus by blood-letting too great a quickness of the circulation may be abated: thus the quantity of fluids to be moved thro' the lungs is lessened; thus the grosser, namely, the red part of the blood is taken away (for blood-letting is only to take place, as we said before when the lungs are not yet wholly stuffed up); and at the same time, the vessels being unloaded, a space will be allowed for the reception of diluents in the form of bath, clyster, drink, &c. *Si enim a sanguine morbi causae provenerint, eas tollit venae sectio. Si vero pituita, seu spuma, seu quaecvis alia humiditas tumefaciat, venarum inanitiones ampliores pulmonis locum faciunt ad respirationis transitum:* “ For, if the causes of
 “ the disease arise from blood, they are removed
 “ by opening a vein. But, if phlegm or froth, or
 “ any other kind of humidity, cause a swell-
 “ ing, emptying of the veins will then make
 “ more room in the lungs for the passage of the
 “ air in respiration.”^m If blood-letting seems not safe enough, Aegineta ⁿ advises as much blood to be drawn by scarification and cupping as the patient's strength will allow. But Aretaeus ^o likewise recommends dry cupping without scarification upon the back, breast, and praecordia; and he

¹ Ibidem.

^m Ibidem.

ⁿ Lib. III. cap. 30. pag. 40. versa.

^o De Curatione Morbor. Acutor. Lib. II. cap. 1. pag. 94, 95.

he observes, that always some relief is afforded to the lungs, if the humours are by that means drawn towards any other part of the body : for he thinks, and very justly, that this dangerous disease ought to be attacked in all quarters ; and therefore, he likewise recommends the application of ligatures to the extremities, that by a compressure of the veins a greater quantity of blood and humours may be retained in the limbs.

2. Concerning these remedies, we treated before at §. 850. For by a vaporous bath the vessels of the lungs are relaxed, so as to give a more easy passage to the humours : and, while the like remedies are applied to the whole body, all the parts become flaccid and retain a greater quantity of humours, which is here required. Moreover a healthy and even robust person may be so much weakened by the continual application of a vaporous bath, as to languish throughout ; and therefore by the same means the vital powers may be so diminished at pleasure in this disease, that there may be no longer any danger of the impervious blood being drove further into the narrow extremities of the pulmonary arteries, which will greatly conduce towards a cure. At the same time also the water insinuating itself by the bibulous veins of the skin will very well dilute the blood. It was likewise customary with the antient physicians not only to foment the external skin of the breast, but likewise to irritate it by the application of the more acrid substances : thus Celsus^p, in the cure of this disorder, tells us : *Prodest etiam impositus super pectus sal. benè contritus, cum cerato mistus : quia leviter cutem erodit, eoque impetum materiae, qua pulmo vexatur, evocat* : “ It will be “ likewise serviceable to apply salt finely powdered “ and

^p Lib. IV. cap. 7. pag. 212, 213.

“ and mixed with cerate to the breast ; because
 “ it gently erodes the skin, and by that means
 “ draws outward the force of the matter which
 “ afflicts the lungs.” The like applications are
 “ also recommended by Aretaeus.”

Here the like ingredients are required with those which were recommended in the comment to §. 850. But of all these we likewise treated under the cure of an inflammation. To these the most gentle anodynes are added, such as for example the flowers of wild poppies, or the syrup prepared from their juice to abate the too great violence of the fever, if it attends (see §. 610.) and to compose the patient to rest, which is also recommended by Aretaeus ;^r at the same time likewise the troublesome cough is relieved by these medicines. But narcotics and such things as stupify, are rather mischievous, more especially in the height of the disease ; for the use of these renders the patient less sensible of the anguish arising from the cause obstructing the blood through the lungs (see §. 631), whence there may be danger of suffocation ; whereas, while they are awake and sit upright in bed, they endeavour to surmount that obstruction, as much as they are able, by more powerful efforts of respiration. But these are to be given in a small quantity at a time, lest by larger draughts the distended stomach might increase the anguish, and that the obstructed lungs may not be overcharged by increasing the quantity of the humours by the sudden ingestion of these. But the frequent taking of the like liquors will easily make up for the smallness of the draughts. But they ought to be drank very warm, because heat greatly increases the diluting power of watery liquors, and at the same time the warmth serves as a fomentation to the
 oesophagus

^r De Curat. Morbis Acut. Lib. II. cap. 1. pag. 95.

oesophagus and circumjacent parts, as it passes along into the stomach.

3. But whether or no we may reasonably expect part of these medicines to pass immediately thro' the wind-pipe into the lungs, when they are taken down slowly, may be questioned. Hippocrates * indeed was of this opinion, for he says, that the drink indeed by swallowing passes plentifully into the stomach, yet seems to think that some part of the liquor swallowed may by degrees slip through the glottis and run down the sides of the wind-pipe. But this he directly proves by the following experiment: *Si quis enim aquam, cyano aut minio inquinatam, potandam dederit admodum sitienti (animali) maxime vero sui (hoc enim animal neque curam adhibet neque munditiem amat,) deinde adhuc bibenti jugulum secuerit, hunc potu coloratum reperiet:* “ For if any one gives water tinged with red
“ lead or indigo blue for drink to an animal which
“ is very thirsty, more especially to a sow (for
“ that beast is neither very curious nor cleanly)
“ and, if immediately upon drinking the throat
“ be cut open, you will find it tinged with this
“ coloured drink.” But he adds, that it is not every one who is fit to make this experiment. Galen likewise was of the same opinion, namely, that naturally there is a small part of the drink penetrates into the wind-pipe, which gradually slips down, as water trickles down the sides of a wall. But, if any runs down not along the side of the wind-pipe, but passes directly in the middle together with the air, then it immediately excites a coughing.† Hence he recommends a medicine to be slowly swallowed by a person lying down on his

* Ibidem.

† In Libro de Corde Charter. Tom. IV. p. 269.

his back, for the cure of an ulcer in the wind-pipe^u. But we read that this experiment of Hippocrates was tried with success by the celebrated Mery^x. The same seems likewise to be confirmed by the relief which is afforded from linctuses which are emollient in coughs from an asperity of these parts. Yet it cannot be denied that, if the liquor thus passes, it can be but in a very small quantity, and consequently but little benefit can be expected from thence. Moreover, it seems very probable that part of the swallowed liquors does not always penetrate in this manner, since wine, vinegar, and the like, are swallowed without detriment; whereas the least particle of those liquors slipping into the wind-pipe must by it's acrimony excite a very troublesome cough.

4. How serviceable clysters are in abating the too great violence of a fever was said before at §. 610. which place may be therefore referred hither, since a sedate motion of the humours is necessary for a mild resolution of an inflammation (see §. 386). Aretaeus^y esteemed clysters so highly that he substitutes them instead of blood-letting, whenever any impediment forbids the use of the latter in this disease. But he recommends the more acrid kind of clysters, because he believed an irritation of any part of the body to be useful in this very dangerous disease: but the use of those which are the most cooling and emollient will suffice, as, for example, ten ounces of barley water, with two ounces of honey, and half a dram of nitre; for the curative indication does not require

^u Galen. Lib. IV. Method. Med. cap. 7. Charter. Tom. X. pag. 101.

^x Académ. des Sciences l'An. 1700. Mem. pag. 310. dans les notes lettre e.

^y De Curat. Morb. Acutor. Lib. II. cap. 1. pag. 94.

Sect. 854, 855. Of a true Peripneumony. 383

quire a liquid discharge by stool, but rather to send in by all convenient passages of the body what may dilute the blood and dissolve it's inflammatory thickness. But that liquors, being injected by the anus, are absorbed by the veins and transmitted into the blood, was proved before in the comment to §. 813 : where we also gave the cautions which ought to be observed in the administration of these clysters.

5. What aliments are convenient in this disorder was declared before at §. 850. For even a healthy person immediately perceives an uneasiness from chyle which is either very thick or much in quantity ; but this uneasiness will be perceived much more in a state of sickness. Rice grewel, barley water, a decoction of oats or bread with honey, inspissated juice of elder-berries, and the like, will here satisfy all the intentions. A decoction likewise of the roots of vipers-grass, goats-beard, succory, and the like, will be equally useful ; concerning the efficacy of which dissolving the febrile viscid we treated before at §. 614. But light and thin nourishment is sufficient in the present case, since the disease, if it is curable by this method, never runs out to any great length of time.

S E C T. DCCCLV.

IF the inflammation be great, and, together with a fever and other more violent symptoms, has continued beyond three days, while at the same time there are signs of the inflammation now inclining to suppurate (§. 833, 834, 835.) there is always then great danger, although the
disease

disease in this case runs out to a greater length, and affords time to treat the disorder by proper remedies: but here, 1. Blood-letting must be either not at all used, or else, if there is any urgent necessity for it, but very sparingly: 2. A thin diet, but a little incaffating and prepared of such things as mature, must be used during this stage: 3. Emollient baths, and vapours for the lungs, and such as mature, must be used unto the fifth day from the beginning of the disorder: 4. On the fifth and sixth days the same remedies must be continued with the addition of suppings, which may excite a slight coughing, together with such as fill the vessels, that perhaps by the seventh day the part may be freed from it's concocted matter, the vessels being attenuated and life sustained.

We have already observed (see §. 830.) that the only safe cure of a peripneumony is either by resolution, or by a speedy discharge of the morbid matter dissolved and rendered moveable. But this is not always practicable, either for want of a proper treatment timely applied, or from the disease being more obstinate in itself. But among the other ways of terminating an inflammation, which yet remain, that which tends to suppuration is the best. We have before explained what the signs are which denote a peripneumony to be turning to suppuration, for which, see the sections cited in the text; and in the comment to §. 833. No. 2. it was demonstrated, that a
resolution

resolution cannot be expected, if the fever and other symptoms continue violent until the fourth day. But, although a mild suppuration in other parts of the body which are accessible to the hands does for the most part commodiously admit of a cure, yet a purulent vomica formed in this vital organ must always be attended with much danger; since by the rupture of such a vomica the matter may escape into the thorax, and occasion a fatal empyema; or it may so infect the whole mass of blood with a purulent cacochymy, that a fatal consumption ensues. Nor is there less danger lest the abscess, daily increasing in bulk, should suffocate the patient by compressing the adjacent vessels before it is perfectly matured, or at least while the mature abscess breaks, as we observed before at §. 836. All our endeavours therefore must be used to procure the maturation as soon as possible, and, when the maturation is completed, to procure a discharge of the confined matter as soon as may be. But what particulars ought to be observed in this case will be made evident in the following paragraphs.

1. When we treated of an abscess following an inflammation at §. 402, and in the following, it appeared, that a little greater motion of the humours through the part affected and throughout the whole body conduces to a maturation of crude inflammatory matter; yet that the motion ought to be so moderated, as neither to break the small tender vessels by it's too great violence, and by that means excite a gangrene instead of a suppuration; nor yet to be so sluggish as not to be able to separate the ends of inflamed vessels, and convert them together with extravasated humours into laudable matter. Blood-letting will not be convenient therefore in this stage of the disease, since it weakens the powers and by that means retards

the maturation. But, if the extreme anguish at this time about the breast makes it seem necessary to open a vein, or if the too great violence of the fever requires to be thus abated, it will suffice to take only so small a quantity as may relieve the symptoms and reduce the fever to it's just standard, without sinking it too low.

2. In order to procure a speedy maturation in the external parts of the body, we apply the softest cataplasms prepared of mealy and emollient substances. For the same reason care ought to be taken to let the aliments have the same qualities, that the chyle prepared from them within the body and conveyed to the lungs may promote the suppuration by their emollient and maturing powers. It is indeed true that the chyle prepared from such substances is commonly more viscid, and consequently may be in danger of increasing the obstructions in the lungs; but then such ought to be given with due caution, that they may not oppress the lungs by their too great viscosity, nor by letting them be taken in too great a quantity at a time. For this reason, Hippocrates ² recommends fat or oily suppings on the fourth, fifth, and sixth day of the disease, because they promote the spitting which is to be brought up; and in another place ^a he recommends several kinds of suppings, as the cream of prisan boiled with honey, honey boiled with water, &c. In our author's materia medica, at the number of the present section, may be seen the principal things of this kind, which are serviceable in the present stage of a peripneumony.

3. When the abscess has arrived to a state of maturity, a passage ought to be given for the mat-

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² De Morbis Lib. III. cap. 14. Charter. Tom. VII. p. 589

^a De Affectionibus cap. 4. ibid. p. 61.

ter to escape, and that as soon as possible, lest, becoming acrid by stagnating, it may corrode the tender substance of the lungs. But here the only safe passage for it is through the bronchia and wind-pipe of the lungs; since otherwise it must fall into the cavity of the thorax, or into the dilated interstice of the mediastinum (see §. 836. N°. 4.), and almost constantly with a fatal event. It will be therefore convenient, as soon as ever the signs of a beginning suppuration appear, to let the patient draw in the vapours of warm water together with the inspired air, that so the whole surface of the lungs contiguous to the air may be mollified, and that the matter may have a very free passage that way; and by the same means likewise the membranes including the matter are rendered more easily apt to break. For this purpose the vapours of warm water alone will suffice, for the efficacy of emollient herbs does not consist in parts volatile enough to ascend together with the vapours of the water, and therefore little good can be expected from them, although the Physician frequently orders them, lest otherwise so simple a remedy should be despised by the patient or attendants. But in all these remedies the patient must persist until the fifth day, from the beginning of the disease. For from what has been said it is likewise evident that most of the remedies, which were recommended for dispersing the inflammation, under the preceding section, do also dispose the disease to a mild suppuration, if it is not capable of being resolved.

4. As soon as ever there is reason to hope that the crude inflammatory matter is converted into laudable pus, a passage must be procured for it as soon as possible: therefore the same remedies

are to be continued ; but likewise a cough should be excited by art, that thus the abscess may be broke by the agitation of the lungs. A mixture of vinegar with honey, which is the oxymel of the shops, being drank warm, either alone or diluted with some emollient decoction or warm wine, will commonly excite a cough strong enough, whereby the lungs are so shook and compressed, that the vomica may be broke, and the confined matter brought up by spitting. A formula or prescription of this kind may be seen in the materia medica of our author, at the number of the present section, which takes in an infusion of the bitter squill in vinegar, than which there is not a more efficacious remedy for detaching the lungs, for which reason it is so much in use. By the use of all these remedies, perhaps the part may be freed from the concocted matter upon the seventh day, which day is of great moment with respect to critical evacuations, as we proved before in the comment to §. 741. Yet that this will not always happen upon that day will be made evident in the following sections. For, unless a speedy maturation is procured, and the matter to be matured is seated in such a part of the lungs, that it may easily pass into the bronchia, a longer space of time will be taken up before the abscess can be broke. In the mean time it will be convenient to promote the maturity of the crude inflammatory matter by all the endeavours of art, and to evacuate it when matured ; otherwise there will be just reason to fear, lest the formed abscess swelling with the confined matter may compress the adjacent vessels so as to produce a new inflammation, which likewise suppurating will create a new abscess, or else increase the bulk of

of the former: hence Hippocrates ^b observes: *Si peripneumonia correptus non fuerit purgatus in diebus principibus, sed sputum & pituita in pulmone remaneant, suppuratus fit, qui si confestim curatus fuerit, plerumque effugit. Si vero neglectum relinquatur, quod in pulmone est, corrumpitur; quo incumbente ac putrescente ulceratur pulmo & pus colligit, neque amplius intro ad se effatu dignum alimentum trahit, neque ab eo quidquam sursum repurgatur; sed cum suffocatur, tum semper difficilius spirat, & respirando stertit, indeque a superiore pectore respirat; tandem vero sputis obturatur, ac moritur.* ‘ If a person afflicted with a peripneumony has no discharge of the morbid matter on the chief critical days, but the spitting and phlegm continue in the lungs, a suppuration then follows; after which, if it be speedily cured, the patient usually recovers. But, if by neglect the matter in the lungs be left to itself, it corrupts; but by the pressure and putrefaction of this the lungs are ulcerated, and become a receptacle of purulent matter; they no longer draw any nourishment to themselves that is worth speaking of, nor are they cleansed by bringing up any thing, but, the matter being confined, the patient then always breathes with difficulty, and with a rattling snoring noise, and with a more evident motion in the upper part of the breast; but at length the spitting is suppressed, and the patient dies.’

^b De Morbis Lib. I. cap. 6. Charter. Tom. VII. p. 537.

S E C T. DCCCLVI.

IF the forementioned signs (§. 835.) teach us that an abscess is already formed in the lungs, the breaking of it into the wind-pipe must be hastened as much as possible; and, when that is effected, the ulcerated part must be speedily and safely deterged or cleansed.

For the first two or three weeks, while a peripneumony is turning to suppuration, or is already suppurated, there is room to hope that the confined matter may by degrees be discharged by spitting, and that the lungs after being deterged may be easily consolidated or healed; for in that time such an ulcer cannot have penetrated very deeply into the substance of the lungs. For this reason therefore we reckoned it among the signs of a future suppuration (§. 833. N°. 3.), when no discharge of a concocted spitting appeared on any of the critical days unto the fourteenth. Hence Hippocrates treating upon this subject says: *Haec autem contingunt diebus ut minimum quatuordecim, ad summum vero viginti & uno. Et hoc tempore vehementer tussit, & simul cum tussi repurgatur: primum quidem copiosum & spumosum sputum (exspuit); septimo vero & octavo die, quando febris in vigore fuerit, si humida exstiterit peripneumonia, crassius procedit; sin minus, non. Nono & decimo die aliquantum cum virore pallescens & subcruentum: duodecimo ad decimum quartum diem usque copiosum & purulentum:* ‘ But these discharges

‘ charges happen at least within fourteen days,
 ‘ and at farthest within twenty-one days. And
 ‘ during this time the patient violently coughs,
 ‘ and, together with the cough, the lungs are
 ‘ cleansed; at first, indeed, there is a copious and
 ‘ frothy spitting evacuated, but by the seventh
 ‘ and eighth day, when the fever is at it’s height,
 ‘ if the peripneumony is of the moist kind, the
 ‘ spitting becomes thicker; otherwise not. On
 ‘ the ninth and tenth day, the spitting is in
 ‘ some measure of the pale greenish hue, and
 ‘ and mixed with small particles of blood; but
 ‘ from the twelfth to the fourteenth day the spit-
 ‘ ting is copious and purulent.’ But when the
 forementioned time is elapsed, and the signs be-
 fore enumerated (§. 835.) inform us that the lungs
 are suppurated, while no discharge by spitting has
 yet appeared, we then know that a collection of
 pus or matter is confined in a large cyst, within
 the substance of the lungs themselves; by a rup-
 ture of which cyst the matter usually breaks forth
 in a stream, and not gradually by a spitting, inso-
 much that sometimes there is danger of suffoca-
 tion, when the purulent matter discharges itself at
 once by a flood into the wind-pipe (see §. 836.
 N°. 2.). The curative indication then demands
 this rupture of the vomica to be hastened, lest the
 matter being longer confined should corrupt the
 whole lungs. But, after the matter is discharged,
 the ulcerated part requires to be speedily and safe-
 ly cleansed, and afterwards consolidated or healed.
 But, by what means these intentions are to be
 brought about, we shall see in the following
 section.

S E C T. DCCCLVII.

A Rupture of the vomica may be attempted when, after a plentiful diet of soft aliments with sweet wines, the lungs suppurated (§. 836.) and prepared by warm vapours (§. 855.) are shook or agitated by crying out, coughing, spitting, tossing in a ship, or in a chariot.

After it appears evident that a vomica full of matter is seated in the lungs, and when the whole area or internal surface of the lungs has been relaxed and in a manner macerated by emollient vaporious baths, (§. 855.) so as to render it very probable that the purulent tumor inclines to break rather towards the wind-pipe, than any other way, in that case, a rupture of it may be attempted. But all that art can effect in this case is only a concussion of the lungs, in whatever manner that may be brought about. But, that this rupture may the better succeed, emollient and fat aliments are to be first taken plentifully, that the stomach being filled and turgid may press the diaphragm upward and compress the lungs, while at the same time the quantity and fatness of the chyle stuffs up the lungs; for, the more all the vessels are distended at this time in the lungs, the sooner may we hope for a rupture; but then the lungs are to be agitated by a violent fit of laughing, crying out, coughing excited by the vapours of vinegar or warm wine, and by vomiting; or the patient may be carried swiftly in a chariot over a stony pavement, or in a ship; by which means the vomica

mica is frequently broke, and the matter runs out with great violence. It is indeed true, that at this time there is danger lest the sudden flow of the matter into the wind-pipe should suffocate the patient; or that the abscess breaking outwardly should let the matter fall into the cavity of the thorax: But these are difficulties not to be avoided, and, the longer the abscess continues shut up, the greater will be the danger of their happening; and besides this, *dum jam extenuatis & decumbentibus pus erumpit, non multum inde levantur, sed pereunt.* ‘ When the matter breaks forth, ‘ when the patient is once exhausted or extenuated, and confined to his bed, he is not ‘ much relieved thereby, but does at length perish^d.’ But, though all these methods may frequently be tried if the vomica does not break at the first time, yet it is best to make use of them when the signs teach us that the latent abscess is about to be broke open. Hippocrates ‘ observes to us, that these abscesses break at various times: *Plurimas quidem vigesimo die, alias trigesimo, alias quadragesimo, alias ad sexaginta dies pervenire;* ‘ that the majority of them indeed break about the twentieth day, others on ‘ the thirtieth, and others again about the fortieth, but some hold out for the space of sixty ‘ days; and he adds^e, that the time of the future breaking of the abscess ought to be reckoned from the first day of it’s beginning to suppurate: and therefore it is most adviseable to try the aforesaid methods about these times. Moreover

^d Hipp. de Morbis Lib. I. cap. 8. Charter. Tom. VII. pag. 541.

^e In Prognosticis Charter. Tom. VIII. pag. 649.

^f Ibidem.

over in other places he gives us some signs which denote that the abscess of the lungs now threatens a rupture. The first of these signs is a fulness of the breast: *Ex pulmonis suppuratione, & circa ventrem interdum & claviculam dolores, & cum anxietate stertere, designant sputi copiam in pulmone*^g: ‘Pains about the belly, and sometimes about the
‘clavicles, from a suppuration in the lungs, with
‘anguish and a noise in the wind-pipe, denote
‘a quantity of matter to be spit up from the
‘lungs.’ If these signs therefore attend, we know that all the parts are so stretched that one may presently expect a rupture. But in another place^h he collects together more signs relating to the present subject: *At ex his, quae celerius aut tardius rumpuntur, his cognoscere oportet: si dolor quidem per initia oriatur, & spirandi difficultas & ruffis, & sputatio perseverans ad vigesimum diem obtineat, expectare ruptionem oportet, vel etiam prius. Si vero quietior sit dolor, & caetera omnia secundum rationem, istis expectare ruptionem posterius. Necesse autem est, & dolorem & spirandi difficultatem, & sputationem oboriri ante puris eruptionem.* ‘But, among these, such as are about to break
‘speedily or slowly, ought to be known from the
‘following: if a pain arises about the begin-
‘ning, is joined with a difficulty of breathing
‘and a cough, while the spitting continues with
‘them until the twentieth day, a rupture ought
‘then to be expected, or even sooner. But, if
‘the pain is very little, and all the other symp-
‘toms in proportion, we may from thence ex-
‘pect the rupture to be later. For pain, diffi-
culty

^g Coac. Praenot. N^o. 18. Charter. Tom. VIII. p. 854.

^h In Prognosticis ibid. pag. 652. & Coac. Praenot. N^o. 402. ibid. pag. 875.

‘ culty of breathing and spitting, must of necessity attend before the purulent matter breaks out.’ The Physician, being admonished by these signs, may easily determine the time when it will be convenient to make use of the forementioned endeavours of art, in order to break open the latent abscess in the lungs. There are many passages in Hippocrates, which prove that he made use of the like methods to procure a rupture of a pulmonary, abscess. Thus, where he treats of a tubercle of the lungs¹, he seems to make use of a vomit, that the matter may be drove forth by the violent concussions from the operation of that medicine. For these are his words : *Quod si morbo liberatum dyspnoea prebendat, dum ad locum erectum pergit, an alias festinat, purgans dato, a quo alvus inferior non moveatur. Et si una cum vomitu pus sequatur, si sane pus fuerit album, & in eo fibrae subcruentae fuerint, effugit ; si vero lividum, cum virore pallidum & graveolens, moritur.* ‘ But if, after the patient is freed from the inflammation, he is invaded with a difficulty of breathing upon going up a pair of stairs, or otherwise bestirring himself hastily, you must then give a purgative medicine, one that does not work downwards by stool : and if, in the vomiting, pus or matter be discharged, of a white colour, and with small streaks of blood in it, the patient then survives ; but, if the matter is livid, or of a palish green, and ill-smelling, the patient dies.’ But in another place^k he orders a mixture of the root of wake-robin with salt, and a mixture a little honey, water, and oil to be laid upon the

¹ De Morbis Lib. II. cap. 22. Charter. Tom. VII. p. 574.

^k Ibid. cap. 16. pag. 567, 568.

the tongue after it is drawn out of the mouth, about the tenth day from the time that the peripneumony changed to a suppuration; and, after the application of this, he orders the patient to be shook by the shoulders to make the purulent matter break forth. If this method did not succeed, he applied in the same manner the juice of sow-bread, acrid foods with the ferulaceous gums, &c. and, if these had no effect, he applied the bark of radish with verdigrease, diluted with oil. But, if neither by these the matter could be brought forth, he cast a mixture of equal parts of goats or cows milk, and tornian wine, with the juice of water-parsnip upon hot plates, and ordered the vapours to be drawn in by the patient through a pipe. From all these it is evident enough, that a violent cough must be excited, by which a rupture of the abscess might be procured.

But, although the abscess should be thus broke, yet the event of the disease will be still doubtful; for there is a suppuration here seated in a vital organ exposed largely to the air, and continually moving every moment of life. Hence therefore in such a case, though every thing seemed to conspire towards a happy cure, yet Hippocrates¹ never presumed to assure the patient of a certain recovery of his health; for these are his words: *Est si quidem quam citissime maturuerit, eruperit, & sursum vergat pus, ac totum exspuatur, & cavum, in quo pus, coincidat, ac resiccetur, prorsus sanus evadit. Si vero quam citissime ruptum fuerit, maturuerit, ac repurgatum fuerit, neque tamen penitus resiccari possit, sed ipsum tuberculum ex se pus effundat, perniciosum id est, &c.* ‘But, though indeed
‘ the

¹ De Morbis Lib. I. cap. 7. Charter. Tom. VII. pag. 540.

Sect. 857, 858. Of a true Peripneumony. 397

‘ the abscess very speedily comes to maturity,
‘ breaks, and intirely discharges the matter up-
‘ ward, and the cavity in which the matter re-
‘ sided closes up, becomes cicatrised, and the
‘ patient perfectly well : yet, notwithstanding it’s
‘ speedy breaking, maturity, and cleansing, it can
‘ hardly be perfectly dried up or cicatrised, but
‘ the tubercle itself continues to discharge mat-
‘ ter which is very pernicious, &c.’ From
whence it appears, that Hippocrates sufficiently
owns the difficulty of curing an open ulcer in the
lungs. Moreover in another place he observes,
that suppuration from peripneumonic diseases is
more fatal in old people ; but that suppuration, in
the lungs from other diseases are more fatal to
young people^m. But what further relates to the
presaging of the good or bad events in this case
has been declared before in the comment to
§. 836. No. 3.

S E C T. DCCCLVIII.

AS soon as the signs inform us that
the abscess is broke, the patient must
be kept upon a milk and soft vegetable diet,
not easily inclined to putrefaction, using in
the day time aperient and deterfive medi-
cines, with gentle opiates at night ; to these
may be added the use of emollient vapours,
and riding upon a horse, in a chariot, or in a
ship.

That an abscess of the lungs is broke so as to
discharge it’s matter into the wind-pipe we know
infallibly

^m In Prognosticis Charter. Tom. VIII. pag. 658. & Coac.
Prænot. No. 431. ibid. pag. 876.

infallibly from the purulent spitting which is brought up, and from the uneasiness which the patient perceives about the breast; and therefore concerning this matter there is no room to doubt. When this appears, therefore we know there is a hollow cyst contained in the lungs, which being before filled with matter is now empty and collapsed; but from what was said before under the article of abscesses it appears, that the sides of such a hollow cyst being a long time macerated in the confined matter become fordid and foul, and on all sides beset with the extremities of the half dead and macerated vessels; therefore in order to a cure it is necessary (as we declared at §. 402.) to cleanse this cavity, and reduce it to the state of a clean wound, that thus the sides may mutually adhere and grow together. In the open abscesses of external parts of the body, we are indeed able to apply various remedies, according as the different state of the part examined by the senses may require; but here nothing can be applied, but what can be drawn in together with the inspired air under the form of vapours, or else what can be drove together with the blood through the vessels of the lungs. But since the chyle, which often retains the nature of the aliments for a long time, must of necessity pass through the lungs immediately after it is mixed with the blood, therefore great care is to be taken not to let the aliments be such as may afford an acrid chyle capable of irritating the ulcerated part of the lungs, and of exciting a new inflammation; for thus the suppuration would be increased, which the indication rather demands to be gradually diminished. The milk of animals which live only on vegetables will here afford a very useful aliment and remedy at the same time. For this, being prepared in the
body

body of a healthy animal, contains every thing in itself which is able to restore what is lost from the body, whether by preceding diseases or by the actions of health itself; and for these reasons milk is so useful in weak people, as we said before upon another occasion in the comment to §. 28. But the mild scowering virtue of the juice of the grafs, with which milk is replete, affords here one of the best detergents to cleanse the ulcer of the lungs. Hence the antient Physicians not without reason esteemed, as Galenⁿ observes to us, *Ulcus in pulmone habentes posse sanari, solo lactis usu, duntaxat antequam magnum illud ac callosum factum fuerit*: ‘ That those who have an ulcer in the lungs may be cured by the use of milk only, provided recourse be had to it before the ulcer is become large and callous.’ Thus also Aretaeus^o, in treating of the cure of a pulmonary ulcer, reckons up the following properties of milk: *Lac vero assumptu suave, potu facillimum, nutritu solidum, & qualibet esca a pueritia familiaris est. Praeterea visui colore delectabile, medicamen arteriam non asperans, guttur laevigans, ad ejiciendum pituitam facilem spiritum reddens, inferiorem exitum lubricum efficiens, ulceribus dulce subsidium & quolibet alio benignius est. Si enim quis multum lactis potet, nullo alio eget alimento, &c.* ‘ But milk is both pleasant to the palate, and an agreeable drink, a solid nourishment, and food of all kinds, which is familiar to us from our infancy. It is likewise agreeable to the eye by its colour, affords a medicine mollifying to the throat, and not offensive to the wind-pipe, rendering

ⁿ De probis pravisque alimentorum succis, cap. 4. Charter. Tom. VI. pag. 426.

^o De curatione morborum diuturnorum, Lib. I. cap. 8. pag. 127.

' dering the breath easy to throw up phlegm ;
 ' it procures a lubricity of the lower passages,
 ' affords sweet relief to ulcers, and is friendly
 ' in every other disorder ; for, if any one drinks
 ' plentifully of milk, they will not stand in
 ' need of any other aliment, &c.' It may be
 therefore sufficient for the patient to take milk
 diluted with water as a drink ; and to take the
 milk alone, or mixed by boiling with rice, barley,
 oats, &c. as food. The softest potherbs, such as
 endive, lettice, spinage, &c. boiled in broth, made
 of the flesh of animals, which live only upon vege-
 tables, may be likewise allowed in this case : But
 all aliments must be avoided which incline to a
 speedy putrefaction, since the foetid smell of the
 spitting of this disease is of so bad an import, as
 we declared before in the comment to §. 836.
 No. 3. But all these are to be taken in small quan-
 tities at a time, and often repeated, that the dis-
 eased lungs may not be too much oppressed by the
 quantity of the chyle.

But those medicines are chiefly recommended
 in this case, which are endowed with a gentle,
 aperient, and deterfive virtue, diffused in a large
 quantity of water. A catalogue of such may
 be seen in our author's materia medica at the
 number of the present section ; where there are also
 some forms of specimens of prescriptions of the same
 medicines. But now, as the spitting appears to
 have a greater or less tenacity, a larger or smaller
 quantity of these should be taken ; and, as the
 oppression at the breast is more or less, so a greater
 proportion should be taken of those things which
 have the power of inciding and attenuating, having
 always a regard to the patient's age, habit, &c. In
 old people, and those of a cold habit, the leaves
 of germander, hedge-mustard, fennel, ground-
 ivy,

ivy, hyssop, and the like infused, as tea, are very useful; for boiling evaporates the fragrant virtue of these plants: but in young people, and those of a warm habit, it may be more useful to have recourse to a decoction of maiden-hair, agrimony, meadow-daisies, borage, scabious, &c. When the spitting begins greatly to lessen, while there is no pain or oppression about the breast, we need not fear that any of the matter is retained which ought to be discharged, but recourse may be had to the most emollient healing medicines, such as a decoction of colts-foot, lung-wort, St. John's-wort, &c. At the same time may be likewise used to good purpose myrrh, frankincense, gum sarcocol, opopanax, &c. made up into a bolus with turpentine, Peruvian balsam, &c. and swallowed several times in a day, drinking afterwards a few ounces of some of the forementioned decoctions: for these mild and native balsams very well deterge the ulcerated parts, and, when they are clean, dispose them to consolidate or heal up. Forms of this kind may be seen likewise in our Author's materia medica at the number of the present section. But these native balsams are very justly preferred before artificial ones, more especially those which are prepared with the oils of linseed, turpentine, sulphur, &c. in all which there is an empyreumatic rancidity and inflaming acrimony, notwithstanding they are so highly recommended by the chemists. The celebrated Boerhaave assures us, with that openness which he uses upon all occasions, that at one time he frequently used such factitious balsams for the cure of ulcers in the lungs and other viscera; but that he found by experience they were more mischievous than useful.

But, when those detergent medicines have been used in the day time to cleanse the ulcerated parts of the lungs, it will be convenient to exhibit a gentle opiate in the evening, which frequently allays the troublesome cough, and composes the patient into a refreshing sleep. But, without this precaution, the lungs being agitated day and night by the troublesome cough undergoes the same rough treatment as if the surface of an external ulcer was every moment rubbed; hence the cure is of necessity very much retarded, since the very soft and pulpy threads of the repullulating small vessels are thus destroyed, and the whole surface of the ulcer becomes crude, painful, and inflamed. In the comment to §. 410, where we treated of abscesses, it was observed that a moderate quantity of pus itself, being left in the abscess after it is open, serves to depurate and foment the hollow sides of the cyst, whereby the extremities of the half dead vessels are separated, and the whole surface is disposed to close and heal in the best manner. But all this is obtained if the coughing be quitted all the night time, whence the matter lies still, becomes digested, and is very easily discharged when the patient awakes to his great relief. How serviceable the prudent use of opiates is in pulmonary consumptions will be declared hereafter, when we come to treat professed of that disorder under it's distinct head.

But, when too great a tenacity of the spitting renders it more difficult to be brought up, and there is from thence reason to fear that all the symptoms may be increased by the retained matter, then more especially it will be of use to let the patient draw in emollient vapours, that thus the matter, being diluted and rendered moveable, may be more easily brought up by spitting.

Riding

Riding on horseback is likewise of the greatest service to cleanse the lungs, and give strength to the whole body, provided the patient is able to dispense with it; or else, in those who are weaker, the carriage of a chariot, or ship, may suffice. For by this means the fresh air, which every moment enters the lungs, sweeps away or shakes off the matter from the ulcerated parts, and removes the load oppressing the lungs, more especially by those concussions of the body which arise from the carriage of a horse; and this even without a cough, or at least with a very slight one. How much riding on horseback is, of use in a consumption which is not too far gone has been very well taught us by the observations of Sydenham, as we declared before upon another occasion in the comment to §. 28. But even the carriage of a ship seems to have been so serviceable in these patients, that Aretaeus^p believed so great a benefit could not proceed from thence only, *maris salsuginem siccum quiddam his ulceribus communicare*: “without some drying quality from the vapours of the sea communicating with these ulcers:” and for this reason he would have the patient not only be carried on the sea, but likewise spend his life there. Thus also Sydenham^q has seen almost incredible effects from the carriage of a horse, if the patient continued in the exercise of it for many months, and gradually increased the swiftness and length of his riding. But, when the patient uses this exercise of a horse, it is necessary for the air to be so temperate as that the lungs may receive no injury from it's coldness; for which reason it is more convenient in winter time for the patient to use the exercise of a close coach.

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It

^p De Curat. Morbor. diuturnor. Lib. I. cap. 8. p. 126.

^q Dissertat. Epistolar. p. 523.

It was observed in the comment to §. 410. that a free accession of the air retarded the cure of an open abscess; and in the cure of wounds (§. 204.) it was likewise remarked, and at §. 245, that the air produced many bad effects by it's coldness and drying quality, as well as because a free admission of the air promotes putrefaction, and from thence it would seem one might conclude the perpetual renewal of the air by riding on a horse, &c. must be mischievous. But if it be considered that a free entrance of the air into the lungs is so necessary to continue life, that it cannot be omitted; and also, that the inspired air grows warm (provided there be no frost) in it's passage through the mouth, nose, and wind-pipe, and becomes filled at the same time with the moist vapours exhaling from those parts; it will be evident enough that no danger ought to be feared from such a renewal of the air, as it cannot be mischievous either by it's coldness or by it's drying quality.

S E C T. DCCCLIX.

BUT if the forementioned signs (§. 838.) denote the abscess of the lungs to be so conditioned, as is observed at §. 837. and as yet there cannot be formed any certain prognosis which way the matter inclines; in that case the patient must use a light fluid aliment moderately aromatized and intermixed with wine in small quantities; the body must be kept quiet, and the medicines must be those of the emollient kind, and such as are very gently aperient; in the mean time, the lungs must be treated with emollient vapours: and by these means the
matte

matter will be determined one way or other, or else, being further dissolved, it will be evacuated from the diseased parts.

When the inflammatory matter stuffing up the vessels of the lungs begins to be dissolved, and to pass into the veins, the lungs are then set at liberty, and the free course is restored to the humours through the vessels of that organ. But when the matter, which hesitated without being able to pass through the vessels of the lungs, is so dissolved that it can easily flow through all the other vessels of the body without disturbing the equable circulation; this makes one of the best methods of cure, namely, by a mild resolution. But, when once the matter of the disease has so degenerated from the nature of our healthy humours, that, although it may be dissolved and moved through the vessels, yet it cannot avoid disturbing the equable circulation, it must then be expelled from the body in order to restore health. But this expulsion of the matter dissolved and rendered moveable happens either by spitting, stool, urine, &c. (see §. 830.) or else, being collected in some certain part of the body, it forms an abscess (see §. 837.) by the opening of which, it is afterwards discharged. If therefore the signs denote that the morbid matter is now dissolved and rendered moveable, and there are no signs in the discharges of the body pointing out that the matter endeavours to escape this or that way, and if at the same time there are no signs indicating towards which part of the body the matter inclines to be deposited, in such a doubtful case it is reasonable to ask what ought to be done.

The curative indication then seems to demand that the patient be supported upon such aliments as will not oppress the lungs by too great a quantity or tenacity of the chyle, though at the same time it should be fitted to increase the vital powers, that so the expulsion and concoction of the morbid matter may more happily succeed. But, since in this case the vessels of the lungs now begin to be freed for the most part, nothing hinders but we may be allowed to give such things as a little increase the motion of the vital humours; for which reason the use of mild spices with wine in small quantities will be now serviceable. But rest of body is recommended lest the patient weakened by the preceding disease should be fatigued, by avoiding which, he will be better able to recover his strength. But every thing which powerfully disturbs the body, such as vomits, sudorifics, purgatives, &c. are to be avoided, for fear of hindering the work, which is already begun by nature, by those unseasonable efforts from art. At that time then only such medicines are recommended as are the most emollient, and which attenuate and dilute all the humours by a mild resolving virtue, and at the same time open the vessels; and of this kind there are some forms or prescriptions to be seen in our Author's materia medica, at the number of the present section. But emollient vapours are to be applied to the lungs, that the obstructed vessels, being thereby relaxed, may more easily give way and yield a passage to those particles, which, for want of being sufficiently dissolved and rendered moveable, are as yet confined. But, when all this happens, there will be the appearance either of those signs which denote a discharge of the morbid matter from the body (see §. 830.) or else there will be evident marks in

in a short time (see §. 838. to 842.), which denote towards what part of the body the matter of the disease will be determined to form there an abscess: but those things which are here convenient will be declared in the following section. But, since it was observed at §. 839. that those abscesses are the most useful in peripneumonies which happen about the legs, therefore it will be convenient, as soon as ever there is reason to suspect a future abscess, to put the lower extremities into such a condition, as that a derivation of the morbid matter may easily happen that way; but concerning this affair we shall treat in the section next following.

S E C T. DCCCLX.

BUT, if, together with the forementioned signs, (§. 838.), there are likewise those of a future abscess present (§. 839, 840.) by which the course or determination of the matter is pointed out, in that case all the same means must be used as before mentioned (§. 859.), and at the same time the part in which the future abscess is expected (§. 839, 840.) is to be so treated by sucking, relaxing, stimulating, and by aperients, as that it may afford a less resistance, and give a stronger invitation to the matter.

When, after the preceding signs of a future abscess, there follow such marks as point out to us that the matter of the disease inclines towards the legs or under the ears, of which we treated at §. 839, 840. in that case all those things must be used in the first place, which we have enumerated

rated before in the preceding section. And then the seat of the future abscess is to be put in such a condition as that the relaxed vessels may more easily admit the matter of the disease to be deposited that way; and at the same time care must be taken to render the impulse of the vital humours somewhat greater in those parts by a gentle irritation with frictions, cupping-glasses, and stimulating applications. But in what manner and by what remedies this may be brought about was explained before upon another occasion in the commentaries to §. 134. and 396. N°. 4. Hippocrates^r observes to us: *Quibus ex morbis resurgentibus quid doluerit, illic abscessus oriuntur*: “ That the part which is painful, in those
 “ who are recovering from acute diseases, will
 “ have an abscess formed in it.” After this, he adds the following Aphorism: * *sed & si aliquid ante morbum doluerit, illic morbus insidet*: “ But
 “ also, if any part is painful before the disease,
 “ that will be the seat of it’s residence.” The truth of these Aphorisms is proved to us by daily observations in practice. Thus in those people who have been a long time afflicted with ulcers of the legs (a disaster very frequent in an inveterate scurvy), if such are invaded with an acute disease, those ulcers usually break out again, and give present relief to the disease however dangerous. We therefore follow the course pointed out to us by nature, when by blisters, cupping, &c. we render those parts painful, towards which the morbid matter may be deposited with the least danger.

* Aphor. 23. Sect. IV. Charter. Tom. IX. pag. 153.

* 33. Sect. IV. Ibid. pag. 154.

S E C T. DCCCLXI.

BUT, if the matter inclines towards the liver (§. 841.), the same methods are to be prosecuted (§. 859, 860.) ; but at the same time must be added aperients which are a little stronger with saponaceous and hepatic medicines ; to which add clysters and a constant use of fomentations.

But if either by a neglect of applying derivative and attractive remedies to the parotids and legs, or if the application of those proves useless, and the signs denote (§. 841.) that the matter of the disease inclines to the liver, and is about gathering in that viscus, then in the first place the same means are to be used that we recommended at §. 859, in order that the lungs may be relieved, the patient's strength maintained, and the matter of the disease dissolved and rendered moveable as much as possible. But since this translocation of the matter is not without danger, and there is just reason to fear that an abscess formed in the liver will occasion the worst chronical diseases, therefore it will be likewise proper to have recourse to the remedies directed in the preceding section ; with a view as much as possible that the matter, now beginning to gather in the liver, but not yet perfectly fixed there, may be conducted to another less dangerous part of the body. It was said at §. 839. that, when the matter of the disease inclines towards the legs, it occasions the like symptoms as denote a slight inflammation about the hypochondria, from whence it is evident,

dent, that as yet there may be some hopes of procuring such a derivation in the present case, or at least it can never be amiss to attempt it.

But at the same time such remedies are to be used as have a very powerful dissolving virtue, that they may be able further to attenuate the matter collected in the liver, that it may be either deposited by a better translation upon another part, or else that it may pass through the hepatic duct into the intestines, and be quickly expelled by stool; otherwise, by remaining in this vilcus and becoming more acrid, it might destroy it's tender and friable substance. Strong decoctions therefore with honey may be drank plentifully, a form of which may be seen in our Author's *materia medica* at the number of this section. Fomentations prepared of the like decoctions may be likewise applied to the hypochondria, and clysters formed of the same may be frequently injected and retained a long time, in order that by their being absorbed through the same meseraic veins opening in the intestines, they may pass directly with their virtues unaltered to the liver. At the same time also by these means the intestines and all their vessels are so relaxed, as to afford a more easy and ready passage for the matter of the disease to escape from the liver by stool. Concerning the efficacy and use of these remedies we shall hereafter have something to say, when we come to treat of an inflammation in the liver, and of melancholy.

S E C T. DCCCLXII.

BUT the disorder before described, namely, a scirrhus of the lungs, (§. 843.) seldom admits of a cure, unless perhaps it may be a little mitigated or relieved by the use of emollients externally and internally, assisted with the exercise of riding upon a horse, or of a carriage in a chariot.

When a scirrhus remains after an inflammation of the lungs, the malady may indeed be tolerable for a long time, but it very seldom or never admits of a perfect cure; as may appear plainly enough from what was said before in the history of a scirrhus. When this disorder is recent, a plentiful use of Venice soap, with the juice of grass and the whey of milk, may perhaps do some good; at least they may be tried without any bad effects. But an adhesion of the lungs to the pleura, unless it be very firm and callous, may perhaps be generally relieved. It was said in the comment to §. 843. that the antients observed a disease in the horned cattle, which they termed coriago or hide-bound, namely, when the skin so adhered to the ribs, that it could not be drawn up from them by the hands. For this disorder they recommended fomenting of the parts with a warm decoction of laurel, and immediately afterwards to rub them with a mixture of wine and much oil heated in the sun; after this the parts of the adhering skin were to be pulled up^t, that, being thus lubricated and mollified, the adhe-

^t Auctor Rei Rustic. Columell. Lib. VI. cap. 13. p. 582.

adhesions might give way, and by degrees remove this troublesome disorder. At least the same method of cure may be safely attempted in a morbid adhesion of the lungs to the pleura: namely, if the body be for a long time filled with plenty of emollient decoctions, while at the same time the breast is anointed externally with penetrating and emollient liniments, the lungs may then be shook by riding upon a horse, or by carriage in a chariot; but external unction will be useful, because frequently the patient can point out the part where the adhesion is, when, by an increase of motion, or exercise of body, they perceive an uneasiness or obtuse pain in that part of their breast. Thus at least we may imitate those methods which are used to advantage for the like disorders when seated in the external parts; nor does there seem to be any thing more capable of being done by art, as it stands at present.

S E C T. DCCCLXIII.

BUT, when the disorder has turned into a gangrene itself (§. 844.), it is incurable.

It is evident enough that hardly any relief can be expected, when that vital organ the lungs is invaded and consumed by a gangrene. When we treated of a gangrene in the viscera in the commentaries to §. 432, we instanced some places from Hippocrates which seem to teach that sometimes a livid and ill-smelling spitting in fevers, the signs of a gangrene (§. 844.) was discharged, and yet those patients survived. But it does not
appear

Sect. 863, 864. Of a true Peripneumony. 413

appear whether these patients were peripneumonic from the beginning of the disease. It will indeed never injure the patient, as we there observed, if the physician declares his hopes even in the most desperate diseases; but in the mean time, if we consider that an inflammation of the lungs is in it's own nature so dangerous a disease, and now terminating in so bad a way, namely, a gangrene, there will appear but small room to hope, if the case is not absolutely desperate. If as yet any thing can be done for the patient in this case, all those remedies which were recommended for the cure of a gangrene (§. 434. & seq.) are to be applied at one and the same time, as far as the situation and condition of the affected organ will admit. Concerning this matter we shall have something more to say hereafter at §. 903. where we treat of a gangrenous pleurisy.

S E C T. DCCCLXIV.

BUT if a peripneumony is already begun to be carried off by a spitting, and that spitting becomes suppressed, all possible endeavours must be immediately used to restore it again. The obstructing causes of such a spitting are frequently the sudden admission of severe cold, great dryness of the body, from whatever cause produced; an ardent fever supervening, heating medicines, a flux or looseness of the bowels not critical, profuse sweats, violent passions of the mind.

We should now have finished the cure of a peripneumony, and considered every thing necessary

sary to be done according to the different manner of terminating the disease, and the different ways by which the morbid matter is thrown out of the body. But it still remains for us to consider what ought to be done, when the spitting which has begun to carry off the peripneumony is of a sudden wholly or partly suppressed. Of how great importance the discharge by spitting is in this disease, and how well the matter of the disease may be that way evacuated, we have already seen at §. 830. No. 2. from whence at the same time appears the extreme necessity there is of using all our endeavours to renew the said spitting, if it is suppressed. It will be likewise very useful to be acquainted with the causes which we know from observations are able to suppress the spitting; and this in order that they may be avoided before they are present, as well as that they may be removed and corrected when they already attend.

Sudden admission of severe cold.] How useful the warmth of a moist air inspired by the lungs may be in the cure of this disease has already been often declared, since the vessels are by that means relaxed and enabled to transmit their contents, while at the same time the fluids are likewise well disposed to pass through the narrow extremities of the vessels. Coldness of the air was reckoned among the causes of a peripneumony (§. 824.); for it appears that a freezing airⁿ dries up and constricts the lungs, and likewise coagulates the blood itself, moving through the vessels of the lungs and exposed almost to the immediate contact of the air. From whence it is evident that from this cause the disease when
present

present will be increased, and from a contraction of the excretory vessels the spitting will be suppressed. When such patients drink plentifully of cold liquors, or imprudently admit the cold air of the winter suddenly into their chambers where they lie, it is not unusual for a dangerous suppression of the spitting to ensue from that cause.

Dryness of the body from whatever cause produced.] While some people are anxious to avoid too great coldness which is here mischievous, they run into another extreme, namely, too great a heat of the chamber, wherein the patient lies. It is well known that the most healthy people breathing in a hot air have all the internal parts of the mouth, nose, wind-pipe, and surface of the lungs themselves extremely dry, insomuch that they are scarce able to swallow, from the great dryness of the membranes. It is therefore no wonder if the same effect follows from the same cause, in those who are diseased. But the drying up of the body from this cause may be easily avoided, if the air be kept to a just degree of warmth, which the thermometer can best point out; and if the moderate warmth of the air be joined with moisture, which may be easily obtained by filling with watery vapours the air which the patient breathes.

An ardent fever supervening, &c.] It was observed at §. 830. that the happy exit of a peripneumony into a state of health by a mild resolution, or by a salutary discharge of the morbid matter by spitting, &c. could only succeed when the fever is mild and of a good kind. If therefore an ardent fever supervenes after such a discharge is begun, the body will be soon dried up by an expulsion of the most fluid juices, (see §. 587.

§. 587.) and that condition of the disease will be changed which before favoured this salutary discharge by spitting. Thus we observe in those who have a pulmonary consumption, and daily evacuate by spitting the matter collected in the lungs, that towards the evening, when their hectic fever is usually much increased, the spitting becomes suppressed, and the anguish is augmented; but at length in the morning, the fever being lessened, the spitting is again discharged to the great relief of the patient. But that heating medicines administered in this stage of the disease will have the same effect may be readily understood from what was said concerning the causes of fevers at §. 586. No. 1: for there it was proved that by such medicines a fever might be excited even in a healthy body; and consequently a fever which is already present may be easily increased by the same means.

A flux or looseness of the bowels not critical.] Every thing which draws off a great quantity of humours or juices from the body may be justly ranked among the causes of a suppressed spitting. We have seen before at §. 830. No. 3. that sometimes the matter of the disease in a peripneumony is evacuated downward by stool; and then it is termed a critical diarrhoea, which may be easily distinguished, by the relief it affords to the disease from that flux of the bowels which is mischievous. Hippocrates * of old has observed in this disease, that a spitting becomes suppressed by a flux of the bowels; for his words are as follow: *Si multus humor per inferiora secedat a quinto die, mortem infert. Secedente enim per inferiora humore, superiora siccescunt, neque sputi purgatio*

* De Morbis Lib. III. cap. 14. Charter. Tom. VII. p. 589.

*gatio per superiora prodit. Inferiorem igitur al-
vum neque nimis sisti oportet, ut febres haud acu-
tae sint; neque nimis subduci, ut sputum sursum
emitti possit, & aeger viribus valeat:* “ If many
“ humours or juices are evacuated downward af-
“ ter the fifth day of the disease, it brings death
“ to the patient. For, the juices running down-
“ ward, the upper parts grow dry, nor does
“ there appear a discharge of the matter upward
“ by spitting. The discharge therefore of the
“ lower bowels ought neither to be too much
“ suppressed, which might occasion an acute fe-
“ ver; nor yet should the intestines be too
“ much purged, in order that the matter may
“ be discharged upward by spitting, and that
“ the patient’s strength may be maintained.”

We observe that, when the fatal diarrhoea puts a period both to the life and disease of a patient afflicted with a pulmonary consumption, the spitting is immediately suppressed.

For the same reason likewise profuse sweating, as it exhausts too great a quantity of the fluid juices, may be apparently the cause of a suppressed spitting.

Violent passions of the mind.] How much the body may be disturbed by violent passions of the mind, we have seen before in the commentaries to §. 99. and 104. But these were likewise reckoned up among the causes of fevers, at §. 586. N°. 3: and it was declared in the commentaries to §. 611. that, when the sluggish motion of the fever is not able to subdue, move, separate, and expel the matter of the disease, it might be increased by exciting the passions of the mind. But since in this case, where the matter of a peripneumony is evacuated by spitting, there

is already a just degree of the febrile motion, there must be evidently great danger, when that motion is increased by the more violent passions of the mind. Add to this that in violent passions of the mind there is always observed an alteration made in the respiration, whence they seem directly to affect the lungs. Thus a person seized with great anger immediately breathes very strongly and pants; and a person suddenly struck with fear immediately perceives a great oppression about the breast, fetches very troublesome sighs, &c.

S E C T. DCCCLXV.

IN this case, there immediately arises a new inflammation in the adjacent parts, from the matter being suppressed, accumulated, and increased, whence immediately ensue the same symptoms as from the original peripneumony (§. 825, 826.); but these happening to a body already weakened generally proved fatal in a little time.

For by spitting was discharged the matter which by obstructing the vessels excited the inflammation, and impeded the free course of the blood through the lungs from the right to the left side of the heart. So soon therefore as this spitting is suppressed, the matter of the disease being not yet evacuated, many of the vessels continue to be obstructed, and are distended by the impulse of the blood urging against the obstructed parts; but the vessels being distended compress each other so as to spread the disease in
a short

a short time ; and then all the symptoms enumerated in the sections cited in the text, and which were now diminishing, break out afresh, or are suddenly increased. But it is evident that from thence the greatest danger ought to be feared, since the patient, being now rendered weaker by the preceding disease, is less able to support this new insult.

S E C T. DCCCLXVI.

BUT this suppression (§. 864.) and its consequences (§. 865.) may be relieved by warm, moist, and emollient vapours drawn into the lungs through the mouth and nostrils ; by filling the whole air of the patient's chamber with the like vapours by art ; also a plentiful use of the like drinks, more especially with honey and vinegar, proves very serviceable ; to these add the use of medicines which by a gentle resolving force are opposed to fevers, such as the antimonium diaphoreticum not washed from the fixed nitre, with gentle opiates, carefully avoiding sweats, and more especially observing to keep the mind easy and quiet.

One of the most successful remedies that can be used in the present case is to let the patient draw in continually warm and moist vapours through the nose and mouth, to moisten and mollify the whole internal surface of the lungs ; for thus the contracted vessels are relaxed, the grosser

humours thickened by preceding dryness are diluted and rendered moveable, and, by both these effects concurring together, the suppressed discharge by spitting is renewed. At the same time also a new inflammation arising from this cause is happily regarded, so that it may be either resolved or cured by spitting, as we have already often observed before. For the same reasons vessels full of warm water are to be placed in the chamber to fill the air with moist vapours. At the same time decoctions of barley, oats, figs, and herbs, which are emollient and gently aperient, may be drank plentifully, that by these the blood may be also diluted and the vessels of the lungs relaxed: these are to be sweetened with honey, which is well known to possess a mild, saponaceous, and dissolving power; and vinegar is likewise added in a small quantity, that a slight coughing may be excited, by which, after the humours are diluted, and the vessels relaxed, all the matter may be expelled which was before retained by the suppressed spitting. Hence the ancient physicians so highly esteemed oxymel in this case. A formula or prescription of this kind may be seen in our Author's *materia medica* at the number of the present section. Hence Hippocrates^y tells us in the present case: *Huic confert potiones bibere, quibus pulmo humectatur & expuit. Nisi enim exspuerit, & durior pulmo evadit, simulque arefcit & hominem perimit*: “To such a patient the
 “ drinking of thin liquors will be serviceable,
 “ by which the lungs are relaxed, and put into
 “ a spitting: for, if the patient does not spit, the
 “ lungs become hard, grow dry at the same time,
 “ and the distemper kills the patient.”

Thos^e

Those mild remedies which we have so often recommended for dissolving an inflammatory thickness of the humours will be here likewise of the greatest use; such are nitre, sal polychrest, sal prunellae, &c. taken either in the form of a powder, or dissolved in the forementioned decoctions. But the stibium or antimonium diaphoreticum is usually recommended beyond other medicines for this purpose, which is prepared of antimony calcined with three times as much nitre; for by this means the nitre is wonderfully changed and fixed together with part of the sulphur of the antimony. It is customary in the shops to wash out all the fixed nitre by ablution with hot water, by which means nothing but a calx or lime of the antimony remains; whereas the saline part ought to be retained, since upon that the principal efficacy of the remedy depends; and then it is called antimonium diaphoreticum non ablutum. Whether or no there is lodged in antimony itself a virtue useful for exciting or renewing a spitting suppressed in this disease, at least there are some observations which seem to teach thus. When the purest crude antimony ground to a very fine powder is boiling for two hours in a lixivium of pot-ashes, and afterwards the boiling matter is carefully poured off from the subsiding powder, when the lixivium grows cold, it deposits a very fine red powder to the bottom, which being washed and dried is the medicine called Kermes minerale or pulvis Carthusianorum; of which three grains given every four hours produce the most wonderful effects^z even in the most desperate cases. But in the mean time it will always be convenient to join aper-

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^z Vide l'Academ. des Sciences l'Ann. 1710. Mem. p. 512.

ent decoctions to these specific remedies together with warm vapours in the manner before recommended; since the extreme danger of the disease calls for all the endeavours of art.

But diacodiate medicines and the milder opiates may be of great use; inasmuch as they quiet too great a violence of the fever (see §. 610.) and stop the flux of the bowels which is often the cause of the suppressed spitting (§. 864.) and at the same time they quiet violent passions of the mind. But what means will be convenient to avoid sweating was explained before in the comment to §. 718; and in what manner violent passions of the mind may be composed so as to restore an agreeable tranquillity was declared in the commentaries to §. 104. and 605. N^o. 5.

From all that has been hitherto said it appears how much the method of cure ought to be varied, though the distemper still continues under the same name; and it is likewise evident that an accurate knowledge of the history of a peripneumony is necessary, in order to apply remedies with success, since what is serviceable at one time of the disease may be of the most pernicious consequence at another.

Of a spurious or bastard P E R I P - N E U M N O Y.

S E C T. DCCCLXVII.

TH A T kind of peripneumony which frequently happens in the winter time from cold, and in the spring from supervening heat, commonly arises from a thick or viscid phlegm, formed in the whole mass of blood by the causes formerly enumerated (at §. 69, 72.); which phlegm, by degrees stuffing up the lungs, at length turns into this very bad and often suddenly fatal disease.

When we treated of diseases arising among a spontaneous gluten at §. 69, it was observed, that there is a twofold glutinous cacochymy; one which arises from the hot glue, called by the antients *phlegma phlegmonodes*, and which by the moderns is usually called an inflammatory viscosity, acknowledging for it's causes a more rapid motion of the humours through the vessels, and a more powerful action of the vessels upon the fluids; the other, which is a cold sluggish matter, is properly called by the denomination of pituita or phlegm, and proceeds from opposite causes, namely, a diminution of the vital motion of the humours, and a less action of the vessels upon their fluids. In both these cases the blood acquires

such a lentor or sluggishness, that it can scarce pass through the smallest extremities of the vessels, but with difficulty. We have before treated of a peripneumony arising from an inflammatory spissitude of the blood. But it is very evident that the blood, being loaded with a cold and sluggish phlegm, will be likewise rendered impervious and apt to stick in the narrow extremities of the pulmonary vessels, which will therefore occasion a disorder like unto the inflammatory peripneumony: for the part affected in both cases is the same, and they have each many symptoms in common; yet there is a great difference in the material cause of the disorder, since in the present case there is a cold mucous ropiness which easily admits of being diluted with warm water, which the inflammatory spissitude does not; and at the same time the violence of the fever in the present kind of peripneumony is much less. In describing the present disease therefore we have retained the name of peripneumony, but, to distinguish it from the former, we have called it a spurious peripneumony. Sydenham is almost the only person who has writ well on this disorder; for among the antient physicians, as far as I remember, there is no mention made of it, at least not by this name; for, under the title of cattarrh and phlegm invading the lungs, there are some passages to be found interspersed, which may be supposed to relate to the present disorder. AETIUS more especially has some particulars which relate to this head, ^a for he observes, that from crude and phlegmatic aliments viscid humours are generated in the body, which are sometimes deposited upon the lungs themselves, and appear under the false shape of an inflammation to the less skilful physicians. He there reckons

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^a Tetrabibl. 2. Serm. 4. cap. ultimo pag. 526.

up likewise many particulars which are agreeable enough to the present disorder.

There is no doubt a great deal of viscid or ropy matter collected in the body during the winter time, in people who indulge idleness and make use of more gross or indigestible food, which at other seasons of the year is dissolved, moved, and discharged from the body by exercise and more healthy food, with the juices of fruits and herbs. Hence Hippocrates says: ^b *Hybernum tempus pituitosius esse aestivo, morbosque fieri circa caput, & illam regionem, quae super septum transversum est*: “ That
 “ the winter season is more phlegmatic than the
 “ summer, and occasions diseases about the head
 “ and the region which is seated above the
 “ diaphragm.” For the blood, becoming viscid and less pervious, almost constantly shews itself first by injuring the functions of the brain or lungs; since, in these parts it is obliged to run through the extremities of the smallest vessels. This is confirmed by the enumeration of winter diseases, which Hippocrates gives us in his Aphorisms, ^c and where he reckons up almost only those maladies which usually afflict the head or breast.

But when this phlegm, which is accumulated in the winter time, begins to be dissolved by the warmth of advancing spring and to mix itself with the circulating humours, and yet is not able intirely to deposit the tenacity which it has, the blood is then loaded with this viscid matter, and often begins to stick in the pulmonary vessels so as to produce the present disease. For it is observable, that not all the juices of the body are continually moved in the circulation; for the oily fat
 collected

^b De Salubri victus ratione text. Charter. Tom. VI. pag. 228.

^c Aphor. 23. Sect. III. Charter. Tom. IX. pag. 118.

collected in the cells of the adipose membrane, as also in the marrow of the cavities of the bones, with the mucus lubricating the cavities of the joints and moving heads of the bones one upon another, &c. are accumulated, more especially when muscular motion is deficient in animals. But Galen^d very well explains why Hippocrates reckons up many diseases arising in the spring time, though a little before^e he pronounced the spring to be very healthy and the least fatal. Galen remarks that the healthy spring preserves those bodies which are furnished with good humours, and does not by it's own nature occasion any innovation in bodies, which cannot be said of the other seasons of the year, since even in the purest habits the hot summer exasperates or exalts the yellow bile; autumn again promotes the generation of atrabilis, and the winter time collects phlegm. But he compares the efficacy of the spring unto the exercises of the body, which are in their own nature very healthy, and yet may be able to produce many disorders in those who are plethoric or cacochymical; when by those exercises the collected humours are suddenly put in motion, or, the vessels being too full of blood, the motion of it is imprudently increased too much through the vessels. This is also confirmed by the testimony of Sydenham,^f who has observed, *Hyeme ingruente, & saepius sub ejusdem exitum, Vereque adhuc nascente, quotannis emergere Febrim symptomatis Peripneumoniacis haud paucis conspicuam, quam Peripneumoniam:*

“ That, at the coming in of the winter, and especially at it's going out, and while the spring is advancing, there appears every year a fever
 “ attended

^d In Commentariis Aphor. 20. Sect. III. *ibid.* pag. 115.

^e Aphor. 9. Sect. III. *ibid.* pag. 98.

^f Sect. VI. cap. 4. pag. 340.

“ attended with many peripneumonic symptoms,
“ and which he has called a false peripneu-
“ mony.

When therefore there is a collection of such viscid matter arising from the causes which we explained under the title of diseases from a spontaneous gluten at the numbers here cited, and this same matter begins to be dissolved by the vernal warmth, or from other causes (see §. 871.) when it is moved with the blood through the vessels, it almost constantly shews it's ill effects first in the lungs; because the same phlegm being received by the veins and mixed with the blood must immediately pass through the lungs, and will therefore first begin to stagnate there, together with all such parts as are less pervious or moveable, and cannot be so attenuated by the action of the lungs as to become fit to flow through the narrow extremities of the least vessels. But a large quantity of this pituitous matter will be in a short time collected in this organ, because all the juices of the whole body are obliged to complete their circulation through the lungs in the same time that they are distributed through all the other parts, as we observed before in the comment to §. 824. It will be therefore no wonder if the lungs are thus by degrees stuffed up, until, most of the arterial branches distributed through the lungs being obstructed, the passage of the blood is hindered from the right to the left side of the heart, whereby sudden death ensues.

S E C T. DCCCLXVIII.

WHEN this disorder has acquired some age or considerable degree, it will have produced in the whole body many effects (§. 71. to 74.); and among those, more especially such as are peculiar to a slow peripneumony (§. 825, 826.), whence the disorder becomes very difficult to cure.

The predisposing cause therefore of a false peripneumony is a sluggish phlegmatic cacochymy, which cannot be long present without injuring many of the functions of the body, from whence the signs of this disorder are derived, which were enumerated and explained in the sections and their commentaries referred to in the text. From those signs therefore and the preceding causes generating such a phlegm, we know that this disease is to be expected and feared. But, when at the same time there are apparent signs which denote that the blood is now more difficultly moved through the vessels of the lungs, we know for certain that this pituita begins to stick in the narrow extremities of the pulmonary artery, and consequently that a false peripneumony is then present. Yet it must be observed, that here all the symptoms do not increase so suddenly as in an inflammatory peripneumony; since the inflammatory viscid is much more tough than this ropy and phlegmatic one, and is sooner drove into the narrow extremities of the vessels by the violent fever which attends; for which reason also this false peripneumony by it's
mildness

mildness often oppresses the patient unawares, when it is least expected, as we shall declare at §. 872. But although in the beginning of this disease it does not seem to be attended with very bad symptoms, and though this phlegmatic lentor is dissolvable in water, yet there is often great difficulty in the cure, because such a mucous cacochymy predominates throughout the body; and from hence the disorder in the lungs will be increased in a short time, for the reasons given at the preceding section; as also because the best remedies for dissolving or attenuating that phlegmatic lentor cannot be rightly used without great prudence, as will be made evident in the following paragraphs. The danger is still increased, because the disease is not easily discovered but by those who are skilful, whence it is often neglected in the beginning, or treated in a perverse manner.

S E C T. DCCCLXIX.

FOR blood-letting which is so highly celebrated, and judged necessary in this disease (§. 854.), will be very mischievous in the present kind of it, on account of the weakness of the viscera, and the redundancy of a foreign phlegmatic humour; hence this evacuation seems at first to relieve the complaint, but soon after it increases the bad symptoms.

The oppression of the breast in this disease seems indeed to call for blood-letting as much as in a true peripneumony, namely, in order to
lessen

lessen the quantity or mass of the fluids to be moved through the lungs, and likewise that by unloading the vessels room may be made for the reception of diluent and attenuating medicines : for which reason Aretaeus, ^s as we declared in the comment to §. 854, recommends blood-letting : *Si pituita aut spuma, vel alia quaevis humiditas tumefaciat ; venarum (enim) inanitiones ampliores pulmonis locum faciunt ad respirationis transitum :* “ If phlegm or froth, or any other humidity, “ occasions a swelling of the lungs ; because an “ emptying of the veins makes more room in “ the lungs for the course of the air in respiration.” But it was likewise said (§. 854.) in the cure of a true peripneumony, that blood-letting ought to be repeated according to the different degree of the disorder. But in this kind of the disorder it seems to be less safe to relieve the oppression of the breast by repeated blood-lettings. For this disorder occurs almost only in those people who have weak viscera, and their humours degenerating into a diseased phlegmatic lentor or ropiness. But it was proved at §. 25. No. 1. and §. 43. No. 3. that weakness of the fibres, vessels, and viscera, arises from an impeded assimilation of the ingested nourishment into the nature of healthy vital fluids ; but that this assimilation is hindered from too great a waste of the good juices, more especially of the blood. For this reason a scarcity of good blood was reckoned up among the antecedent causes of a spontaneous gluten at §. 69. where it was likewise proved. Blood-letting therefore will indeed relieve the oppression of the breast, and by that means seem at first to be serviceable ; but in the mean

mean time, being too copious or often repeated, it may increase the phlegmatic lentor, which is the material cause of the false peripneumony, and consequently it may be injurious.

S E C T. DCCCLXX.

BUT the attenuating medicines which are so famous in this case, as they increase the impulse of the humours into the vessels of the lungs, and often augment the density and cohesion of the obstructing matter, they likewise frequently render the disease suddenly fatal.

When therefore a cold phlegmatic cacochymy is present, the curative indication will seem to demand a division and attenuation of the viscid matter; to perform which, an increased motion of the humours with stimulating remedies are recommended (see §. 75.) But, the motion of the humours being accelerated, the heart contracting itself more frequently and powerfully in a given time will urge the blood more into the pulmonary artery; and consequently, if the humours are not fluxile and the vessels pervious, the phlegmatic obstructing matter will be drove into the narrower extremities of the vessels: thus the obstructed vessels will be more distended, and more streighten the adjacent pervious vessels by compressing them; and therefore all the maladies will be increased; and the disease will be speedily fatal; of which we are assured so frequently by fatal instances, when patients or their attendants, accusing the coldness of the air as the only cause of the disease,
make

make use of the hottest medicines, as beaten pepper, or ginger with honey, strong fermented liquors, or spirit of aniseeds, lovage, and the like; the ill effects of which Sydenham^h has observed, and tells us by too free a use of the like things all the passages of the lungs are shut up in this distemper. Hence also this caution was given before in the comment to §. 75. N°. 4. where we treated of the cure of the spontaneous gluten, lest patients full of glutinous humours should be suddenly exercised with strong motions, as then there might always be danger of stuffing up the lungs with this glutinous matter.

It is therefore evident, from what has been hitherto said, that a false peripneumony is difficult to treat properly, and that it requires the greatest prudence in order to be cured.

S E C T. DCCCLXXI.

THIS disease frequently happens to old people, such as are phlegmatic, of a cold habit, and afflicted with catarrhs and colds, in which it usually happens from all those causes which act by driving the stagnant humours suddenly into the lungs; such as running, haranguing, singing, fuddling, more especially with spirituous liquors, feasting, the heat of a great fire, bath, or of the sun itself, more especially if the heat thence arising is suddenly followed with great cold.

But this disorder most frequently happens to those people in whom there is a predominancy of
that

that viscid phlegm from any cause. But such are always old people, who are said by Hippocratesⁱ to be of a cold body; and therefore he observes they are more frequently troubled with a difficulty of breathing, defluxions, and slight coughs.^k For the breast is usually oppressed in old-age by a tough and cold mucus, which the unhappy patient in vain attempts to discharge by a fruitless coughing for want of due strength in the respirative muscles. Hitherto also may be referred cold and phlegmatic people, who are by physicians usually said to be of a phlegmatic habit or temperature. Great smoothness of the skin, slender white hairs, slow of growth, with whiteness, plumpness, softness, and fatness of the body, and small veins hid from the sight, are esteemed as the signs of such a temperature^l. But, in those afflicted with a cold or catarrh, there is already such a disposition as demands a great quantity of humours speedily thickening to escape through the internal membrane of the lungs, and be evacuated by coughing (see §. 69. N°. 5. 719, 793.); and therefore by the accession of any other cause stopping the discharge of those humours the lungs will continue oppressed and stuffed up by them.

If now to the present material cause of this disease be joined others, which determine that matter, hitherto dispersed unequally throughout the body, towards the lungs, or which put it into motion and mix it with the circulating humours after lying stagnant, a false peripneumony will then be present. But of this kind are the following causes:

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F f

Running,

ⁱ Aphor. 14. Sect. I. Charter. Tom. IX. pag. 24.

^k Aphor. 31. Sect. III. Ibidem pag. 128.

^l H. Boerhaave Institut. Medicar. §. 891, 895.

Running, haranguing, singing.] For by running the motion of the blood is accelerated through the lungs, and the stagnant juices are suddenly put in motion. But by singing and calling out aloud a violence is offered to the lungs themselves. See what has been said upon this subject in the commentaries to §. 824.

Fuddling, &c.] We have already seen in the commentaries to §. 586. N°. 1. that the heat and velocity of the blood's circulation are increased by wine or other fermented liquors, and the spirits distilled from thence, insomuch that by an excess of them the most ardent fevers may be excited. Drunkenness is therefore justly ranked among the causes of a false peripneumony; and that more especially when it proceeds from the more heating spirits, such as those distilled from aniseeds, lovage, and the like. Moreover, those unhappy people who daily abuse these liquors are cachectical, pale, and swelled, and their whole body is often filled with cold and mucous humours. For after the turgent vessels have been distended by the rarefied juices during the time of the drunken fit, when that is passed over by sleep, the whole body is flaccid and languid, until that langour is removed again by such stimulators. Hence by the frequent distension of the vessels their strength is destroyed, and their action upon the contained fluids is lessened, whence almost all the juices degenerate into a mucous inactive cacochymy. See upon this subject what has been said in the comment to §. 605. N°. 11. In drunken people therefore there is the material cause of a false peripneumony present, which being put into motion by a fresh abuse of fermented spirits may easily produce this disease. What has been said is likewise confirmed

confirmed by the testimony of Sydenham,^m who gives us the following passage: *Paulo hebetiores ac crassos prae caeteris aggreditur; virilem aetatem vel assequutos, vel etiam (quod saepius accidit) praetergressos; liquoribus spirituosus, (vini maxime spiritui) plus aequo addictis. Cum enim in hujusmodi hominibus sanguis humoribus pituitosis, brumae tempore congestis, fuerit oneratus, atque idem ab ineunte vere in novum motum cieatur, tussis hanc nata occasionem mox subingreditur, qua ministra dicti humores pituitosi in pulmones irruunt: quo tempore si forte aeger, nullo vivens consilio, liquores ejusmodi spirituosos adhuc liberalius hauriat, crassescente jam fere, quae tussim excitabat, materia, & ab ea praecluduntur pulmonum aditus, & febris omnem sanguinis massam depascitur: “ This disease more
 “ especially invades those who are somewhat more
 “ fat and thick than others; those who have either
 “ attained to the age of maturity, or past beyond
 “ it, which more frequently happens; and to
 “ those who are too profusely addicted to spiri-
 “ tuous liquors, more especially spirit of wine.
 “ For, since in such people the blood is loaded
 “ with phlegmatic humours collected together in
 “ the winter time, and as this is put into a new
 “ motion from the advancing spring, a cough
 “ soon follows from this cause, by which means,
 “ the forementioned phlegmatic humours flow to
 “ the lungs: and at this time, if the patient, not
 “ living according to any rule, freely indulges
 “ himself in drinking of the like spirituous liquors,
 “ the matter which excited the cough, being there-
 “ by almost concreted, stops up the passages of
 “ the lungs, and a fever at the same time preys
 “ upon the whole mass of blood.”*

F f 2

Feasting

Feasting is hitherto justly referred, as people are enticed to eat beyond what is sufficient by the variety of foods and fauces. For that from thence a fever is often kindled we declared in the comment to §. 586. N^o. 1. whether it arose from the too great quantity of the food only, or likewise from the nature or quality of the aliments. Add to this, that, when too great a quantity of food is taken, the lungs are then often oppressed by the greater quantity of crude and tenacious chyle; and from thence also a true peripneumony may arise, as we demonstrated in the comment to §. 824.

[Heat of a great fire, of a bath, or the sun, &c.] When the forementioned sluggish phlegm pre-exists in the body, and afterwards from any cause the heat is increased, the standing matter is then moved, and forcibly drove together with the blood through the lungs; and therefore there is danger that the matter may begin to stick in that organ. But when the body grows hot, even by the external heat of a fire, we see plainly that the vessels are dilated, so that they may easily admit the grosser parts of the humours; the truth of this is evident from the greater redness of the face in people who sit before a large fire in the winter time. If therefore the heat thus occasioned is suddenly followed with severe cold, as when a person having been a long time in the warm bath suddenly exposes himself to the most freezing air, the vessels are in a moment concreted together (see §. 117.); and consequently there is the greatest occasion given for producing an obstruction (see §. 107.) But this will happen in the lungs more than in any other part, because the other parts of the body may be defended from the cold by clothing, whereas the continual necessity of the
air

air in respiration prevents it from being excluded from the lungs. From hence likewise the reason is evident why both a true and false peripneumony so frequently arise from this cause. See what has also been said upon this subject in the comment to §. 118.

S E C T. DCCCLXXII.

THIS kind of peripneumony at first oppresses the lungs with a false or treacherous lenity; for the oppression of the breast begins with a slight weariness, weakness, and prostration almost of all the faculties of the mind, with a shortness of the breath, and so slight an increase of the circulation, that there is hardly any heat or signs of the fever pointing out the danger: soon after, there are shiverings not confined to any particular part, and the patient is attacked with a slight fever, from whence the difficulty of breathing and weakness being suddenly increased, death ensues, though there were scarce any signs presaging it either in the urine or pulse.

If any disease by it's false mildness deceives the less skilful, it is this; for here there is no intense heat, great fever, or other violent symptoms which usually attend a true peripneumony (see §. 826.) For the material cause of the disorder is a sluggish unactive phlegm, which begins slowly to be collected in the narrow extremities of the pulmonary arteries. But in the mean time the great

danger which attends this disease requires that the physicians should be able accurately to know it in the very beginning. But the diagnosis of this disease may be had from the preceding causes, and from a careful observation of the injuries of the functions. If therefore we know that a person is, from his natural habit or temperature, age, ill diet, or other preceding diseases, filled throughout the whole body with a sluggish mucous humour, and afterwards, there is an accession of such causes as are capable of moving that mucous substance, and mixing it with the circulating humours, so that it may be drove into the lungs, we then know there is reason to fear the present disorder. But among those signs which inform us that a sluggish phlegm is moved together with the blood through the vessels, and is rendered less pervious, are reckoned a slight weariness and greater weakness, together with an unusual dryness, when such patients are hardly any longer affected with passions of the mind, while both their external and internal senses are dull. For that cheerfulness of the mind and activity of the body, which attend healthy people, suppose a free motion of the humours through all the vessels, and the existence of a due quantity of nervous spirits. But, when such a mucous cacochymy infects the blood, the humours are rendered impervious, the secretions are obstructed or impeded, and there follows a deficiency of the most subtile liquid, whence all the vital, natural, and animal motions are disturbed, as we demonstrated more at large in the commentaries to § 71. and 72.

But, when that sluggish phlegm begins to stick in the vessels of the lungs, the free passage of the blood from the right to the left side of the heart

is then impeded, whence the patient endeavours to breathe with greater efforts to forward the course of the blood; and from hence there is a panting, with complaints of a troublesome anguish and oppression at the breast. But in the mean time there are no signs or at least very slight ones of any fever attending. Then follow shiverings not confined to any particular part, together with the attack of a slight fever, so that at one time the patient is hot, and at another time cold again.ⁿ But by degrees the lungs are more and more stuffed up, *Pulmonum coarctatio adstantium auribus percipiatur*: “ So that the obstruction or oppression of the lungs
 “ may be perceived by the ears of those who stand
 “ by;”^o namely, that disagreeable rattling, concerning which we treated before in the comment to §. 826. The shortness of breath increases together with the weakness, and at length, *intercepta circulatione, sanguineque quasi praefocato*, “ the circulation being intercepted, and the blood in a
 “ manner stopped,”^p *nulla fere, praesertim in hebetioribus, febris indicia sint*, “ death ensues, although there are scarce any signs of a fever,
 “ more especially in fat people.”^q But the absence of the fever, or the cause from whence it is hardly perceptible, is by Sydenham^r derived partly from the circulation intercepted by the obstruction of the lungs, and partly because the blood charged with a great quantity of phlegmatic matter cannot be rarefied or heated into an ebullition. Hence the reason is evident why there are scarce any signs appear either from the pulse or urine, whereby the fatality of the disease may be presaged.

F f 4

But

ⁿ Sydenham, ibidem.^o Idem, ibidem.^p Ibidem.^q Ibidem.^r Ibidem.

But although it is usual to observe a pale urine with scarce any smell in people of a cold and phlegmatic disposition (see §. 72.) yet in the present disease the urine is sometimes observed extremely red and turbid, as soon as it is discharged, as Sydenham^s likewise observes. Sometimes also it is discharged turbid, and continues so without depositing any sediment; and generally upon shaking it a froth arises, which continues a long time. And therefore in the urine, for the most part, there are signs which afford an ill presage, although I have also seen the urine sometimes hardly at all changed in a false peripneumony. But although redness of urine is esteemed a sign of internal heat, as we declared at §. 673. in the present disease such urine may be easily made, as will appear if we consider that the disorder chiefly invades those who are short and fat, as we observed in the preceding section. But, when in these people the inactive oily glue is dissolved by motion, heat of the air, &c. and suddenly mixed with the blood, an imperviousness of the humours of the worst kind is produced (see §. 681.); and it is these oily parts which being mixed with the salts of the urine make it look red; which colour, that it depends chiefly upon the oil, was proved in the comment to §. 673.

! Sydenham^t likewise observes, that these patients, when they cough, perceive a troublesome pain in the head as if it was ready to split, for so they express themselves. Nor is this at all to be wondered at if we consider that, the course of the blood being impeded through the lungs, the easy return of the venal blood from the head is likewise diminished, and consequently all the vessels
of

* Ibidem.

* Ibidem.

Sect. 872, 873. Of a false Peripneumony. 441

of the encephalon are turgid, (as we made evident in the commentaries to §. 826.); whence it is also evident why such patients frequently are afflicted with vertigo, which Sydenham^u has likewise observed.

These are the principal signs from whence the diagnosis of this disease may be derived. The prognosis denotes danger, if it be not timely relieved; the method of performing which will be declared in the following section.

S E C T. DCCCLXXIII.

THE cure of this peripneumony is to be attempted with great caution in the following method: 1. Let the patient be bled from a large orifice: 2. Soon after, let the bowels be washed out with a clyster, which is to be repeated every day until the signs teach us that the lungs are relieved: 3. Let the patient live upon a moist thin diet of flesh broths, more especially mixed with a mild acid; and let the drink be thin, of water and honey: 4. The vapours and suffitus or fumes before described (§ 886.) may be likewise used; and in the mean time diluent, absterfive, and very mild aperient decoctions are to be drank constantly; to these may be added bathing of the legs and feet with the application of large blisters.

^u Ibidem.

1. So soon as the shortness of the breath, and oppression perceived about the breast by the patient, denote that the lungs are stuffed up, a vein must then be opened. For thus the mass of fluids to be moved through the lungs will be lessened, and together with the blood drawn out will be removed part of the phlegmatic matter flowing with the blood through the veins, the febrile motion will be lessened if any attends, from whence might be feared a greater impaction of the viscid phlegm into the narrow extremities of the pulmonary arteries, and, the vessels being likewise unloaded, convenient room will be made for diluent and attenuating remedies. It is indeed true, that blood-letting may increase the remote cause of this disorder; since it appears from what was said at §. 69. No. 2. that a scarcity of good blood is justly reckoned among those causes which produce the said sluggish gluishness; and (as it was proved in the commentary to §. 75. No. 4.) that an increased motion is useful to attenuate this lentor: but the ill effects that may follow from such a loss of blood may be afterwards remedied when the lungs are relieved; and the imminent danger of life, when the lungs begin to be stuffed up, obliges us to have recourse to the lancet. But blood-letting often repeated, which is so frequently necessary in a true peripneumony, will be rather mischievous in the present disease, as Sydenham * likewise observes; who by a diligent observation learnt that the lancet had the very worst success, more especially in those who were of a more thick or fat habit of body and past the flower of their age, as those chiefly are who become most obnoxious to

* Ibidem, pag. 341.

to the present disease. But Sydenham^y so much feared the weakness that might follow after blood-letting in this disease, that he ordered the blood to be taken away from the patient lying down upon a bed: for thus he very well prevented fainting, which is pernicious in this disease, as we declared in the comment to §. 854. But the blood is drawn from a large orifice, lest the phlegm with which it is charged might obstruct a smaller opening. It was customary with Sydenham^z to renew the blood-letting on the third day of the disease: but, since blood-letting is only allowed in the present disease upon urgent necessity, therefore it is most adviseable to abstain from repeating it, if the lungs are before relieved.

2. After blood-letting a clyster is immediately injected to wash out the bowels; and thus, the faeces being evacuated and the bowels cleansed, the bibulous veins may absorb those liquors which are afterwards thrown up that way, and which by their saponaceous and a dissolving power may be able to attenuate that viscid matter. Therefore in the materia medica at the number of the present section is prescribed a clyster of honey, nitre, the yolk of an egg and barley water, which may very well serve all the necessary purposes of each indication. Even Aretaeus^a esteems the use of clysters so much in the cure of a peripneumony, that he believed it able to supply the place of blood-letting when the latter might be objected to upon any account. These clysters may be therefore injected daily, until, the respiration becoming easy and the strength of the pulse greater, we
by

^y Ibidem.

^z Ibidem, p. 342.

^a De Curatione Morbor. Acutor. Lib. cap. 1. p. 94.

by that means know that the lungs are relieved : but, when we perceive this, clysters are laid aside, to avoid weakening the body too much, concerning which, see what has been said in the comment to §. 610.

A mild cooling purge is by Sydenham ^b recommended to be taken every other day, until the patient recovers. But such purgative medicines which act with a resolving power at the same time, without evacuating the most fluid juices from the body, seem the most likely to do service.

3. As the lungs are obstructed with impervious matter in the vessels, as we have often said before in the history of a true peripneumony, therefore a most thin diet will be convenient. But here flesh broths, which are thin or dilute, are recommended, because they have the least tenacity ; and, in barley, oats, &c. prepared into a mealy decoction, there is a lentor or viscosity which might rather increase than remove the material cause or the disease (see §. 69. No. 1.) : but a mild acid is added to these broths, such as the juice of citrons or oranges, in order to correct that disposition whereby they naturally incline to putrefaction. Sydenham ^c indeed orders the patient to abstain from flesh broths, because he believed an inflammation attended in this disease, though much less than in a true peripneumony : yet he acknowledges a false peripneumony to arise from a phlegmatic matter collected together in the winter time ; but he seems less accurately to have distinguished the difference betwixt the inflammatory viscid and the cold inactive pituita, which are of very opposite natures. But thin
drinks

^b Sect. VI. cap. 4. p. 342.

^c Ibidem, p. 342, 343.

drinks of water and honey are recommended, because honey by it's saponaceous force divides all lentor or ropiness, which then becomes easily dilutable in water which is here necessary.

4. The warm and moist vapours, which were so often recommended before in the cure of a true peripneumony, will be likewise evidently enough of the greatest use in the present case; for the vessels of the lungs being relaxed will more easily afford a passage to the matter stagnating and obstructing them; at the same time also the internal surface of the lungs is thus well disposed to evacuate some part of the morbid matter by spitting. But such medicines will be more especially useful, which act by diluting, absterging, and attenuating; and of this kind a form or prescription may be seen in the materia medica at this number of the present section. The inflammatory viscid cannot be diluted with water only; but that ropy phlegm which attends the present disease may be easily dissolved in warm water; and therefore much good may be justly expected from the use of diluents in the present disease. It is indeed true that a copious use of warm watery liquors may be mischievous to relaxed and phlegmatic bodies: but here we make use of them no farther until the lungs are relieved, for then there is no danger.

But baths are applied to the legs and feet, that by relaxing these parts the panniculus adiposus may swell and receive into it's cells a large quantity of the ropy phlegmatic matter, which may be thus drawn off from the lungs as much as possible. For we see that in leucophlegmacies and cold habits of body the panniculus adiposus is tumefied with such viscid matter, from whence
the

the doughy softness of the parts proceeds: thus by art we endeavour to reduce the inactive puita to those parts where it was before lodged, and where it may be deposited without much danger. For it is not barely sufficient to have relieved the lungs by dissolving the matter stagnating and obstructing the vessels, unless at the same time all our endeavours are used to hinder the same kind of matter from flowing again copiously to the lungs.

But more especially large blisters applied to the legs and thighs may be of great service. For these irritate and inflame the parts to which they are applied, and raise up the cuticle into blisters filled with ichor, or sometimes with a more viscid humour. How much use these may be of likewise by deriving the impetus and quantity of the humours towards those parts to which they are applied was declared before in the comment to §. 396. No. 4; and therefore in this respect also they will be useful. Moreover in the comment to § 75. the efficacy of blisters was applauded for exciting by their acrid stimulus the too languid motion of the humours, and at the same time for dividing and attenuating all that is phlegmatic and inactive, which is here more especially necessary. These may be safely applied without the least danger of loading the lungs too much by that increase of motion which they communicate to the humours; and, after blood-letting and diluting clysters have been used, blisters have the most happy effects.

S E C T. DCCCLXXIV.

FROM all that has been said (§. 820. to 874.) a reason may be given, why this disease does not so frequently happen to children and women? and why this disorder hardly ever happens to those who have a loose or relaxed structure of the solid parts? why also in such it is easily and almost spontaneously cured, and why the contrary takes place in those people who are robust and addicted to exercise? From thence likewise it is evident that this disorder happens from almost every other disease preceding, before the patient is extinguished by that disease; and therefore the immediate cause of death, and the ultimate effect almost of every fatal disease, is a peripneumony.

Here follow some corollaries or deductions which may be easily explained from the history of a peripneumony before given.

Why to children, &c.] For the compages of the vessels in most women and in children are less firm, and therefore their contained fluids are less condensed or thickened; hence the blood is more dilute, and appears to have a less cohesion in such patients. Here likewise the vessels are easily dilated; and from thence the body becomes (*caeteris paribus*) softer and more turgid or plump, as is well observed by painters and statuary. Hence Hippocrates ^d remarks that a peripneu-

^d Coac. Praenot. No. 512. Charter. Tom. VIII. p. 882.

peripneumony and pleurisy do not happen before the age of puberty.

Why to those who have a lax state of the solids.] For there are some people to be found who have so weak a cohesion of the solid parts either naturally or from a preceding disease and an idle way of life, that the vessels scarce exert any action upon their contained fluids, or at least they do not act so powerfully as they ought, in order to render the body firm and virile. Hence in such men almost all the same consequences take place as in women, and they live less obnoxious to inflammatory diseases.

And why in these it is easily and almost spontaneously cured.] If in such habits of body the blood stagnates or sticks in the smallest extremities of the pulmonary artery, since the blood never has that density which we observe in a firm and robust body, these obstructions usually dissolve of their own accord; or at least they are easily attenuated by standing, together with the warmth of the part, and assisted by diluent drinks. Moreover as the lax vessels in such people very easily give way to the distending fluid, when the blood expelled from the adjacent heart is urged against the obstructions, the obstructing vessel will be dilated, and the obstructing particles will be thrust further on, till they pass through the arteries into the veins, or till they escape through the least exhaling arteries, opening into the air-cells of the lungs, and are discharged by spitting. For either of these ways an inflammation of the lungs may be most happily resolved, (as we have seen before in the comment to §. 830.) in which place we likewise observed that such a happy termination of a peripneumony might be expected

ed when a laxity and softness take place throughout the whole body.

Why the contrary takes place in robust and exercised bodies.] For here every thing contrary obtains: the blood is dense and compact, diluted with but a small quantity of serum, and soon hardening when it is drawn out of a vein; the vessels are also firm, contracted, and do not easily yield to the impelled juices. Hence such people are more liable to inflammatory diseases, and are more difficultly cured when taken ill of them. Hence Hippocrates observes, as we have often declared before upon other occasions: *Densa & exercitata corpora citius a morbis pleuriticis & peripneumonicis perire, quam non exercitata*: ‘That strong and exercised bodies sooner perish by pleuritic and peripneumonic diseases than those which are not exercised.’

From thence it was likewise evident, &c.] It was said in the comment to §. 1, that life wholly, and even to the least degree, consists in the action of the heart, as yet contracting and dilating itself. But the heart cannot be contracted, without expelling at the same time the blood which is contained in it's cavities; but in mankind, after the birth, all the blood of the right side of the heart must pass through the lungs. When therefore a person is about to die, the action of the heart, being now weak, and soon after about to rest, will not be able to overcome those obstacles which arise from the resistance and narrowness of the pulmonary vessels; the blood will therefore begin to stagnate in the lungs, and, while the thinner parts of it flow through the veins to the left ventricle of the heart, life will by that means be continued for a while in a weak condition; the lungs will therefore be every moment more

and more stuffed up with blood, 'till at length there arises so great a resistance to the right ventricle of the heart, that it can no longer empty itself; it will then remain distended and at rest, and thus death will be present.

If now we consider those appearances which are observable in dying people, it will be evident that the ultimate effect almost of all fatal diseases is a peripneumony. For those last struggles betwixt life and death, which are called agonies in dying people, excite intolerable anguish, and arise from an obstruction of the blood in it's passage out of the heart (concerning which, see §. 631.). That disagreeable rattling in the throat and lungs of dying people affords a certain sign of the lungs being stuffed up; and the like is also confirmed from the shortness and difficulty of the breathing, with a raising of the shoulders, and motion of the nostrils, with sighings, &c. We may therefore conclude, that a peripneumony takes place from almost every other previous disease before the person dies, or is killed by it. For, if we except those cases in which life ceases in an instant by the heart being rendered paralytic, (as in a perfect syncope, from the most violent passions of the mind, from the most profuse and sudden evacuations, extreme old age, &c.) death is always preceded by those struggles which make the common and usual highway to it, and which are much worse than death itself.

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